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*garden
journal*

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Front Cover:

Berberis darwinii growing amongst floor plain shingle with the extinct (?) Calbuco volcano beyond; *Nothofagus* forest on mountain slopes: Port Varas-Ruelen road, Chile.

(photo: Noel Lothian)

Contributors to this Issue

Noel Lothian

had his initial professional training at Burnley Horticultural College, after which he worked at Fitzroy Gardens, Melbourne, Christchurch Botanical Gardens, the Royal Botanic Gardens, Kew, and Munich Botanic Gardens. During the war he spent several years in charge of Army farms in New Guinea. After the war he was appointed Senior Lecturer at what is now Lincoln University, New Zealand, and became Director of the Botanic Gardens of Adelaide in 1948. He spent 33 years in that position, during which he was responsible for the planning and establishment of the Mount Lofty and Wittunga Botanic Gardens. He now runs a horticultural consulting and advisory service and in his spare time does some writing, grows some bulbs and does a bit of gardening in between.

Contents

Australian Gardens - and South American Plants	page 143
Chile, the Home of Many Wonderful Garden Plants	page 144
The Rhododendron Park at Mount Pleasant	page 146
Katandra - A Bushland Sanctuary	page 147
Australian Garden History Society	page 148
Plants at Port Arthur	page 150
Roberto Burle Marx - an Architect of Nature	page 152
Some Temperate Woody Ornamentals from South America	page 156
Plants Wanted	page 159
Garden Study of Camden Park	page 159
Book Reviews	page 160
My Favourite Gardening Book	page 161
Cottage Garden Plants	page 161
The Leura Gardens Festival	page 162
Ornamental Spurges	page 163
New Zealand's only surviving Wardian case?	page 164
Garden Cuttings	page 166
Our Native Plants in Danger	page 166
'In Praise of Trees' Exhibition	page 168
Open Day at Wirrimbirra Sanctuary	page 168
International Garden Festival	page 168

Dr Brian Morley

read botany at the University College of North Wales and studied for his Ph.D degree at the University of the West Indies and at the Royal Botanic Gardens, Kew. From 1969 to 1975 he was taxonomist at the National Botanic Gardens, Glasnevin near Dublin. He joined the staff of the Botanic Gardens of Adelaide in 1975 and has been Director since 1981.

Polly Park

is an American living in the Canberra suburb of Red Hill. There she has created a garden, or rather a series of gardens, of outstanding beauty along purely classical lines. She lectures on the history of gardens, and has visited gardens in many parts of the world.

Mary Davis

is a landscape designer and horticultural consultant. She and her husband are at present renovating an old farmhouse on the north-west outskirts of Sydney.

Australian Gardens — and South American Plants

In this issue three contributors write about the gardens and plants of South America. Some may ask why South America? And who wants to go there anyway?

There are several reasons why. Firstly, Polly Park draws an interesting parallel between the development of the country which she writes about, Brazil, and Australia, and suggests that, unlike the former, we have not yet dared take the plunge and pioneer a new Australian concept in architecture and garden design. Others in the past, including Edna Walling, have remarked on the apparent incongruity of following the English garden-making tradition when the Spanish or Mediterranean type of garden is so much more in keeping with our climate, the quality of light in this country, and our lifestyle.

Then South America, as Noel Lothian and Brian Morley show us, has a vast, diverse and in many cases exciting flora, much of which could be, but has yet to be, used extensively in our gardens, since it is eminently suited to temperate horticulture. As Noel Lothian points out the only way in which the amateur enthusiast can introduce plant material from overseas is by bringing in seed. Our strict plant quarantine regulations forbid the free importation of vegetative material — for which we should, of course, be thankful, as they have at least kept us free of such plagues as Dutch Elm Disease and Fire Blight.

The answer, surely, is for our nursery industry to become more adventurous and to introduce more of these little known, but garden-worthy plants under the normal quarantine procedures. Brian Morley, in his article, thoughtfully provides a key to nursery availability which covers many, but by no means all, of the genera he mentions. I hope the nurseries named will be inundated with enquiries from readers of this Journal.

Which brings me to the main point I wish to make. The other day I was sent a clipping from the Newsletter of the Dawes Arboretum, in the U.S. The article was headed "Shortage of Ornamentals — who's at fault?" and it went on to say this:

Contributors to this issue (continued)

Penelope Ralph

has spent several years researching the early introduction of exotic plants into Australia, and has been acting as Plant Consultant for the Port Arthur restoration project for the past year.

Nan Townsend

is a Trustee of the Katandra Wildlife Sanctuary; she and her husband spend much of their spare time maintaining the reserve and guiding visitors through it.

John Adam

is Assistant Horticultural Superintendent at the University of Auckland.

Mexican Courtyard Gardens

The article by John Patrick on Mexican Courtyard Gardens has been unavoidably held over until the October issue.

"Ask the producers of nursery stock about the problem and they'll cite production problems and/or a lack of demand. Consumers can't do much about the former, but if they eliminate the latter nurserymen will quickly solve the former. If more consumers knew as much about plants as they do diets, soaps and world problems they, too, would ask for good plants in variety. And they'd get them".

So it's up to us, the gardening public, to make more noise and demand the plants we want. If we do this perhaps there will be more nurseries stocking *Berberis valdiviana*, *Cantua buxifolia* and *Maytenus boaria*.

There seems to me to be nothing illogical about the concept of a more Australian style of garden design, on the one hand, and the use of more exotic plants on the other. Surely what we need are the **best** plants for our conditions, whether they happen to be native to Australia, South America, South Africa, Asia, or wherever. Do English and American gardeners limit themselves to their own native plants? And, after all, we don't normally furnish our houses **only** with Australian-made furniture; so why our gardens **only** with Australian plants?

In subsequent issues we hope to take a look at the gardens and plants of South Africa, California and the Mediterranean.

TIM NORTH



NOT AN ENGLISH GARDEN IN MID-WINTER
BUT OUR GARDEN AT BOWRAL ON THE 4TH JULY 1984.

Chile, the Home of Many Wonderful Garden Plants

by Noel Lothian

Of all the South American countries, Chile offers the greatest range of plants most suited to temperate horticulture. Already some are well known — *Alstroemeria*, *Hippeastrum*, *Eucryphia*, *Crinodendron*, *Berberis*, *Lapageria*, *Gunnera*, *Nothofagus*, *Mutisia*, and *Escallonia* — to mention a few. There are many others awaiting introduction and while some of these are already in English, American and European gardens, very few are in general cultivation within Australia.

A glance at a map shows Chile as a very long thin strip of country approximately 4200 km on the western coastline of South America, stretching from 18 to 56 degrees South. In Australia, the equivalent distance is from Townsville in the far north to Macquarie Island — some 2500 km south of the southern coastline of Tasmania. Its eastern boundary is along the central Andean chain (probably late Tertiary in age with the higher peaks capped with permanent snow), while its western boundary is the Pacific Ocean and extends southwards to the Straits of Magellan and beyond. Most of it is elevated with associated valleys with many peaks reaching above 5000 metres. The seaboard regions vary in height from a few metres to about 1500 metres. The southern Andes especially are highly volcanic with numerous active volcanoes, and the central region of Chile is subject to frequent and often severe earthquakes.

The country can be separated into roughly three or four distinct regions. In the northern third, say from 18 to 30 degrees South, the cordilleras take the form of a bare plateau with the occasional oasis, but it contains some salt lakes. It is usually regarded as desert which, like Australia's inland regions, "blooms" only after the rare and good rains occur. Climatic conditions vary considerably but extremes of heat are seldom observed because of the influence of the cold Humboldt Current which arises in Antarctica and flows along the whole of the western coastline. The greatest extremes are recorded from the desert of Atacama, where temperatures vary from over 40 degrees during the day, dropping to 2 to 3 degrees at night. Rainfall is very low (50 to 70 mm) increasing up to 300 mm as one goes southwards.

The central portion (30 to 39 degrees South) can be generally regarded as Mediterranean in character and climate. There is a coastal range of mountains dipping down and into an extensive north/south inland plain, rising again towards the Andes. Rainfall is almost limited to the winter months (except the very occasional thunderstorm) and ranges in the northern area from about 350 mm rising close to 600 mm in the south, increasing again as one travels towards the Andes (Santiago, the capital, receives about 450 mm). While there are patches of forest in the better watered portions and along river valleys and creek banks, much of the country is clothed with evergreen broad leaf forests or in the drier and rocky parts it is scrub covered. Around Valdivia (39 degrees South) dense forests of *Nothofagus*, conifers and laurel supply most of Chile's timber requirements.

The central coastal section is rich in varied plant growth, including succulents and cacti, while a few hours drive eastwards from Santiago towards the Andes sub and alpine vegetation can be seen. Bulbous plants are also found in numbers.

The southern region (39 to 56 degrees South) and from below 32 to 42 degrees is mainly mountainous and contains many large fresh water lakes which, unlike their northern counterparts, are usually full the year round.

Rainfall is likely to occur throughout the year and varies from 700 mm to over 3000 mm. However, the regions on either side of the Straits of Magellan are in a rain shadow from the Andes, where rainfall is low (Pt Arenas, 52 degrees South, has about 400 mm). Active volcanoes are present and the scenery is most attractive with permanent snow covering the higher peaks throughout the year. Much of the country is covered with temperate and cool temperate rainforest similar in character to that found in Tasmania. In addition the area is rich in many trees, shrubs, climbers and bulbous and herbaceous plants. In the rainforest many epiphytes are found, while on the ground terrestrial orchids occur in some places.

From Chile and Puerto Montt (about 42 degrees South) to the southern tip of the continent the country is rugged but peaks are usually below 3900 metres and, because of submergence of the land, glaciers reach the sea. Low scrublands are common, and much of the lower undulating plains are covered with extensive grasslands, leading to cattle and sheep farming. Much of this country receives heavy snow falls during the winter months with the growing period limited to a few months.

Included in this region, but which can be regarded as a separate section, is the Patagonian Ice Cap some 600 km long, comprising permanent ice and snow, with many of the glaciers reaching the coast. In the far south which includes the Straits of Magellan and the many adjoining islands, of which Terra del Fuego is the largest (about half of which is Chilean territory, the other is disputed territory with Argentina) moorlands and low scrub are present.

The floristics of Chile are fascinating. Of the plant families 34 belong to the monocots and about 127 are dicots, 12 are ferns and fern allies, with three *Coniferae* and one *Ephedraceae*. In the first named, *Graminae* is by far the largest with 19 tribes containing about 90 genera. *Amaryllidaceae* is next with 20 genera, *Orchidaceae* is poorly represented (seven genera) which is less than *Iridaceae* (nine) and *Cyperaceae* (ten). A large number of the families and genera have only one or two species while a few are monotypic. Many of these are endemic and it is estimated that about 120 genera are endemic to Chile.

In the dicotyledons, *Compositae* is the largest with 12 tribes and up to 150 genera, followed by *Cruciferae* (42 genera), *Umbelliferae* (30), *Scrophulariacae* (24), *Solanaceae* (23), and *Leguminosae* (22). Many of these genera are also endemic. Overall there are signs of botanical relationships with Australia and New Zealand, but less with South Africa.

Amongst the largest genera *Senecio* is outstanding with nearly 400 species, followed by *Adesmia* (*Leguminosae*) with about 250, *Oxalis* has about 150 (many subalpine and alpine), with *Solanum*, *Calceolaria*, *Acaena* and *Baccharis* following. Of the monocotyledonous genera which have garden appeal, are *Chlorea* (*Orchidaceae*), *Sisyrinchium* each with about 50, and *Alstroemeria* and *Hippeastrum* (*Rhodophilia*) about 30 species each.

Since 1767 when Bougainville made the first collection of plants of Chile, botanical investigations have proceeded through the years. Considerable exploration was carried out during the 1820s to 1840s, culminating in Pizarro's work in 1959 "Synopsis of the Flora of Chile" in which 182 families and 960 genera of plants are described. Today, indications are of a total flora of some 6700 to 7000 species of which 900 to 1000 are regarded as

being limited to Terra del Fuego and the adjoining islands along the Straits of Magellan.

In March 1982 it was possible for me to visit Chile (through the kindness of my sister who has lived there for more than thirty years) when we were centred on Santiago, the capital. During the following months visits were made to various parts of the surrounding countryside, with longer excursions travelling by air, train and car to regions southwards and onto the Straits of Magellan.

Santiago is situated between the coastal ranges and the Andes at about 500 metres elevation. In a short time, however, it is possible, travelling eastwards, to reach the subalpine flora regions. The region is cut by several rivers, the Mapucha being the longest. In the mountains deep gorges have been cut and the road follows the valleys into the Andes. Faranalles, leading to Villa Pauline, is situated at about 2500 metres after steeply climbing with the road in the final few kilometres taking thirty-seven hairpin bends! Low scrub covers much of the lower slopes with several *Mutisia* species scrambling amongst them. *Trichocereus* species are to be seen in numbers and its internal parasite — *Phrygilanthus* — makes its startling appearance along their trunks with clusters of bright blood red flowers. Another characteristic plant is *Puya* which is present in several species, including *P.chilensis* (yellow flowers) and *P.berteroniana* (green-blue flowers).

On the higher levels around La Parva *Alstroemeria spathulata* and related species are seen, with *Hippeastrum*, *Placea*, *Rhodophilia* met with amongst the rocks, together with a variety of herbaceous sub-shrubs. Amongst those seen were *Oenothera acaulis*, *Calceolaria*, *Godetia*, *Phacelia*, etc. Unfortunately, because of the advance of the season, very few of these were in flower.

Another excursion was made through the TilTil Valley, the river banks lined with numerous trees of *Salix chilensis* (a very different form to that seen in Australia), and on to El Roble, one of the towering but not snow-covered peaks. At present it houses radar and other equipment. The countryside was covered with low to medium sized scrub of which many *Baccharis* species were prominent. Many of these species could be introduced into cultivation because their masses of cream or white flowers are most attractive. On the rocky hillsides *Puya* plants stood out and are just as spectacular in fruit as in flower. Scrambling amongst the scrub were several species of *Mutisia*, most of which were not in flower. Considering how common they are it is strange that seed has not been introduced into Australia. However, on examination of spent flower heads, often only one or two plump seeds could be found.

The valley is well cultivated with orchards and vegetables. A remarkable crop is "Tuna", the fruit of *Opuntia indica*, which is a favourite and commonly seen in wayside fruit stalls and city shops. The plants are grown in rows about two to three metres apart and the fruit harvested when ripe, but firm.

The road climbs steadily, clinging to the side of the mountain. On the higher levels *Nothofagus obliqua* appeared as a small scrubby tree, but in the higher valleys this species develops into a tree of some ten to twelve metres high. In the autumn the foliage turns a brilliant orange-red.

Traversing the length of the central region — as far south as Puerto Montt — is the Pan-American Highway, built with American assistance. Part of this was used on a trip to Zapallar, a coastal town some 100 kilometres to the north-west of Santiago. Scrub lands were again travelled through but also large and very

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extensive plantings of eucalypts, principally *E.globulus*, and plantations of *Pinus radiata*.

Market gardening and orchards, together with vineyards, were frequently seen. The coastal flora is interesting; various species of *Cactaceae* were noted and a large flowering *Calandrinia* (*C.grandiflora*) with bright red flowers up to 5 cm across grew on the coastal rocky headlands, together with *Oxalis cariosa*. The less common *Fuchsia rosea*, a rigid and somewhat spiny bush, also inhabited coastal promontories amongst which were *Puya* and several bulbous species including *Hippeastrum advenum* in various colour forms. On the foreshore *Haplopappus foliosus* is common, together with *Verbena*, *Podanthus*, *Senecio*, etc. and other strand plants.

An overnight train trip from Santiago to Puerto Varas on the shores of Lake Llanquihue travels through farm lands for cattle and sheep, orchards and vineyards. Patches of forest are also to be seen. Midway between the railway and the Andes, from a few kilometres south of Temuro, are extensive lakelands.

Port Varas is a long established centre with attractive gardens and a public square. This contains some excellent specimens of *Myrtenus*, *Eucryphia* and *Gevuina*. Over on the far side of the lake rises Osorno, a volcano in a perfect cone, snow-capped, but its base is heavily clothed with rainforest.

The surrounding countryside, and that of the island of Chiloe, is totally different from the central region. Open spaces are cleared lands, but elsewhere the more or less level areas and lower slopes of the mountains and hills are covered in dense temperate rainforest which is rich in epiphytes. Botanically the whole region is fascinating with a great many plants of good horticultural poten-

tial. While an odd Podocarp may be seen, the principal trees, all usually over the 30 metre mark with diameters up to one metre, include *Drimys winteri*, *Laurelia philippina*, *L.semperflorens*, *Embothrium coccineum*, *Gevueina avellana*, *Amomyrtus (Myrtus) luma*, *Eucryphia cordifolia*, *Nothofagus betuloides*, *dombeyi*, *nitida* and *obliqua*.

Shrubs are also common, including *Azara integrifolia*, *lanceolata*, *Myrceugenia* spp, *Ugni* spp, *Escallonia rosea*, *rubra*, *alpina*, *leucantha*, *Ribes* spp, etc.

Entering the rainforest one finds it dark and dank except where a tree has fallen over. Epiphytes abound, including ferns, *Mitraria coccinea*, *Asteranthera ovata*, *Sarmienta repens* as well as *Luzuriago radicans* and *L.polyphylla*.

Along the river banks many areas are colonised with bamboo — *Chusquea quila* and related species — *Berberis* spp, especially *B.darwinii*, *Gunnera chilensis*, *Fuchsia magellanica*, *Escallonia* spp, *Calceolaria* and *Netera*. In the more open shrubland *Mutisia* spp are common. On dead trees clumps of a bromeliad — probably *Ochagavia* — are found with their bright red centres.

The flight from Puerto Montt to Puerto Arenas is one of the most spectacular to be seen anywhere. The early section is over the sea, but this quickly changes to mountain peaks and then the Patagonian Ice Cap appears and for the next half hour or so is the main feature of the scenery below. It is stupendous, wide, and long glaciers pour down from the heights and in many places reach the sea where they break up into icebergs, which even from 6000 metres, can be clearly seen. Now and then a high peak protrudes to show bare rock faces. It is essential that you make this flight on a clear day otherwise all you will see are clouds! During the last few minutes of the flight the Ice Cap suddenly disappears, the mountains become hills, and you fly over moorland-like country. The change is dramatic and although one regrets the absence of the mountains much of interest is to be seen in the way of changing scenery. You land soon afterwards.

Port Arenas, with a population of about 93,000, is almost the most southerly colonised town in the world. Across the Straits of Magellan the mountains of Terra del Fuego are clearly visible. The vegetation around Port Arenas is low and stunted *Nothofagus* with many shrubs present. Extensive areas of grassland are present on which large flocks of sheep are grazing. The region is most interesting and one should not allow the opportunity to pass of visiting the historical agricultural museum (Institute of Patagonia, established in 1969), the Institute of Horticulture, together with the craft shop. All contain numerous items of great interest. On the highway from the airport into Port Arenas is a magnificent group statuary, a tribute to the early settlers.

There is also an open air plant museum called the Carl Skottsberg Botanic Garden, in honour of that great ecologist and botanist. Collected and growing together are the principal species likely to be seen in the region, *Verbena*, *Berberis*, *Embothrium* (a dwarf form), *Azara*, *Tepualia*, *Myrceugenia*, *Escallonia*, *Ribes*, etc.

A visit to Lake Pehoe and the Paines Towers (pronounced "pinies") is a must, calling at the cave of the Milodon on the way. Bones of the Milodon were discovered c. 1895 and a life size model of the beast has been erected at the mouth of the cave.

On the way to Port Natales, approximately 240 km north-west from Port Arenas, the scenery is magnificent with lakes, grassland, and mountains dominating. Wildlife in the form of many bird species, including carquinis and condor, and animals including skunks and guanaco will be seen. Extensive cooperative sheep and cattle stations are passed, and on some crops of hay are also

grown. Port Natales is a very pleasant little town full of interest, situated on an arm of the ocean.

Lake Pehoe is very scenic with the Towers of Paines towering above it. The three towers are massive vertical rock heads, over 2600 metres in height, and are a training ground for would-be mountaineers and rock climbers. The vegetation is varied, depending on the quality and amount of soil, aspect and exposure. *Nothofagus* is again the common tree, often infested by one of the many mistletoes which are found throughout the country. Many herbaceous plants are to be found such as *Azorella* spp, *Anemone magellanica*, *Viola* spp, and sheets of *Gunnera magellanica* cover the ground, the female plant displaying the bright orange-red fruits, forming a colourful carpet.

To obtain the full benefit from a visit to Chile a stay of months, not weeks, is essential. While the northern regions can be easily accommodated during the early spring months, it is not until full summer has arrived that the plants in the southern and alpine regions commence to bloom, and if seed is to be collected a further period is necessary to allow these to mature. Another essential is a knowledge of Spanish, unless you are fortunate, as we were, to have available a ready and excellent interpreter!

Although a full day's flying will return you from Santiago to Sydney, via Easter Island and Tahiti, unfortunately, because of our quarantine regulations, seed is the only way of introducing many of the very interesting and colourful plants to be found in Chile. This is a pity, because most of the shrubby material could be introduced readily by cuttings — but these are not allowed in!

The Rhododendron Park at Mount Pleasant

The Illawarra Branch of the Australian Rhododendron Society, founded in 1967, has its headquarters at the Rhododendron Park, Parrish Avenue, Mount Pleasant, near Wollongong.

The 58 acre park was donated by Australian Iron and Steel Company and covers the whole of the eastern side of Mount Pleasant, thus giving the very sharp drainage needed by the thousands of rhododendrons and azaleas grown there. An interesting feature is a large planting of the Vireya, or tropical, rhododendrons.

One area of the Park is planted and cared for by the Wollongong Camellia Society, and another area is used for growing native plants.

A steep climb enables one to enter the temperate rainforest area, which is slowly being enlarged, and which is representative of the vegetation of the area before it was opened up by the Mount Pleasant Colliery, which operated from 1849 to 1933.

Brickwork, carpentry and plumbing for the toilet block and barbecue was classwork for apprentices of Wollongong Technical College, and the Gazebo was made by apprentices from A.I.S.

All work at the Park is done by volunteers and the only sources of income are donations and the sale of plants provided by members. The Park is open to the public every weekend from Easter to the end of October.

Katandra — a Bushland Sanctuary

by Nan Townsend

There is something very satisfying, intriguing and completely absorbing in becoming involved with a patch of Australian bush.

In my case I happened on a small paragraph in our local paper in the spring of 1975 — "Katandra Bushland Sanctuary, Lane Cove Road, Mona Vale; open to the public . . ." Surely we had walked in all the available National Parks, wild flower gardens etc in our area, but Katandra? Curious to see what could possibly be a Bushland Sanctuary in that area we raced down one Sunday morning with limited time on our hands. Once on the track we became enthralled with the natural beauty of the rocks, trees, flowers and bird song, and there began a love affair with a few hectares of bushland.

Katandra is on the eastern escarpment of the hills overlooking Mona Vale and the ocean. The walk traverses forest, heathland, a remnant of rainforest, fern fringed creeks and small waterfalls. Because of this there is a great diversity of plant life — to date over 350 on our check list, from tall turpentines, twisting angophoras and forest casuarinas to tiny terrestrial orchids a few centimetres high. From August it bursts into colour, golds of the pea flowers, pinks from the boronias and eriostemons, glowing sunset colours of the banksias, blue of dampiera and white of the graceful pimelea. These are the show stoppers bursting with the joy of spring and they are a delight. But close to the ground are the delicate, shy inhabitants of the forest floor, blue brunoniella and pseudanthemum and my favourites, the small terrestrial orchids — helmets, acianthus, arthochilus, greenhoods (four species), flying duck and many others — so beautifully unassuming and so at home with their environment.

Each season brings its own rewards. There is always something new. The summer brings flannel flowers, bottlebrush, Christmas bush and blueberry ash. In November almost all the flowers are white. We had a discussion on this and someone came up with the suggestion that maybe it was "Moth Pollination Month" as white was a good night colour.

This development doesn't always mean wandering dreamily around, drinking in the subtle delights of the bush. Weeds have to be kept down — lantana, crofton weed, privet and other exotics are a perpetual worry. Maintenance in the Sanctuary is done regularly by Trust members. Both these tasks must be carried out with little or no damage to the environment and woe betide anyone who accidentally treads on a new *Boronia thujona* seedling — they do so love to come up in the middle of a path.

In December 1979, when all Sydney seemed to burst into flames Katandra did not miss out. The fires swept down and around the hill and engulfed Katandra, stopping at dusk at the creek. We arrived early the next morning to see black devastation; nothing remained except black earth and black trees, still smouldering. The earth's agony was our agony, its loss our loss. But from it we learned the magic resilience of our bushland. A little rain and it burst forth from ligno tubers, from epicormic buds, those ancients the xanthorrhoeas sent up new green growth and seedlings popped up everywhere. The boronias were interesting; *Boronia mollis* and *B. ledifolia* had seedlings in the first six months, *B. pinnata* sent up new shoots from the parent plant at the same time, but it took *B. thujona* two years to reappear. One great bonus from the fire was the appearance of that loveliest of blue flowers, the *Lobelia dentata* which were prolific and



(photo: Stan Scotchmer)

with us for two years. It had not been seen since the fire of 1968.

And how did this precious fragment of bushland escape development? Because of a very determined effort by a far-seeing environmentalist who probably didn't even know that trendy word at the time. Mr Harold Seymour bought the land at the end of World War II and decided it must stay in its natural state for all time. It is now gazetted as a sanctuary dedicated to the preservation of native flora and fauna and there is a plaque in the Sanctuary with this inscription "Katandra Bushland Sanctuary — a Bounteous Gift to Naturalists from Harold Seymour". Harold Seymour is creator of Katandra and little is done without his advice and counsel. I, for one, thank him for his bounteous gift.

To the purist I apologize for the use of mainly common names but they seem more intimate — after all *Ceratopetalum gummiferum* doesn't conjure up thoughts of an Australian Christmas nearly as much as Christmas Bush.

Our address, if you would care to visit us, is:

Katandra Bushland Sanctuary, Lane Cove Road, Mona Vale, NSW, off Mona Vale Road, where there are finger posts. We are open from 10 am to 4 pm each Sunday in August, September and October and at the same times the third Sunday in the month during the rest of the year.

AUSTRALIAN GARDEN HISTORY SOCIETY

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Chairman: Mr Howard Tanner

Secretary: Mr Tim North, PO Box 300, Edgecliff, NSW 2027

Treasurer: Mr Chris Betteridge, 3 Pine St, Randwick, NSW 2031

All correspondence should be addressed to the Secretary.

Subscription renewals

Members who have not renewed their subscriptions for 1984/85 should do so as soon as possible; no further reminder notices will be issued and all subscriptions not renewed by 1st October will be deemed to have lapsed.

A.G.H.S. Journals

The Society published four journals, covering the period Spring 1980 to Spring 1982, before the journal was amalgamated with The Australian Garden Journal in June 1983. Copies of these four journals are still available for \$1.00 each from The Editor, Australian Garden Journal, PO Box 588 Bowral, NSW 2576; please include an additional 60 cents with each order to cover postage and packing.

State News

South Australia

A South Australian Branch of the Society has now been formed, with a Committee constituted as under:

Chairman: Mr Tony Whitehill

Secretary: Mr Trevor Nottle

Treasurer: Mr Gavin Malone

Members: Mr Rodney Beames, Dr Barry Long: ex-officio members; Mrs Margaret Sando, Dr John Brine.

(see also report on Old Anlaby in this section)

Victoria

Winter being a time for hibernation there has been little activity during the last two months. During July members were invited to join with National Trust members at Illawarra, where a very pleasant Chinese meal was followed by an enlightening illustrated lecture by John Patrick on his recent visit to Chinese gardens.

The following diary dates for future functions should be noted; August (details to be notified to all members separately)

4th October: Annual General Meeting. It is hoped that members will stay for wine and cheese after the formal meeting.

14th October: a picnic day at Heide Park and Art Gallery. Members who heard Diana Morgan's talk last year on old-fashioned roses will be delighted to see the Heide roses at the height of their spring blooming. The kitchen garden will also be of great interest and we anticipate having people available to answer members' questions.

28th October: a "working bee" at Belmont (one of the properties to be visited during the November Annual Conference).

Tasmania

The Tasmanian Branch Committee is now constituted as under:

Chairperson: Mrs E.A. Cameron

North: Mrs I.M. Mackinnon, Mrs B. Skerritt, Mrs R. Mackinnon

South: Mrs P. Mackay, Mrs R. Lewis, Mrs P. Cripps

Ex-officio: Mr M. Hurburgh

The Tasmanian Branch, in conjunction with the School of Landscape Architecture, TCAE Launceston, held a very successful one day course on "Landscaping the Home Garden" at the TCAE on Saturday 26th May. The course was run by Mr John Patrick, Senior Lecturer in Amenity Horticulture at the Victorian College of Agriculture and Horticulture, Burnley, Melbourne.

(see also separate report on Port Arthur in this section)

New South Wales

The Sydney and Northern NSW Branch held a garden walk in Sydney's eastern suburbs on Sunday 26th May. Among the gardens visited were St. Kevin, Queen Street Woollahra, a Federation home magnificently restored by Mr Leo Schofield; Elaine at Double Bay, built in 1863 by William Norrie, a Master Mariner, and owned by the Fairfax family since 1898; Rona at Bellevue Hill, a grand stone mansion built in 1883 that has been in the possession of the Knox family ever since; and 2 Ginahgulla Road Bellevue Hill, formerly the Rona stables and now the home of Mr and Mrs L. Cook.

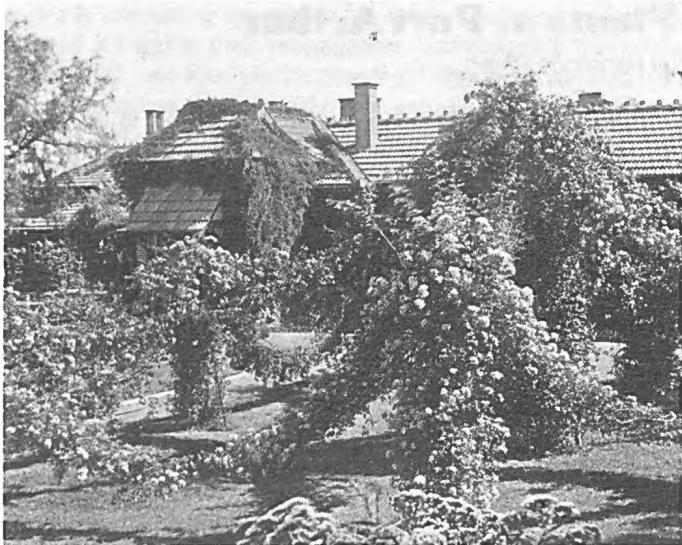
The two NSW Branches combined to sponsor lectures by Mr John Patrick on "Gardens of the Peoples' Republic of China"; one lecture was given at the Conservatorium of Music in Sydney on Friday 27th July and the second at the Mount Eymard Conference Centre at Bowral on Saturday 28th July.

Arrangements have been made for a visit to the Wollongong Botanic Gardens and to the Rhododendron Park at Wollongong on Sunday 9th September. A Garden Walk in the Bowral-Moss Vale-Exeter area will be held over the weekend of 27th and 28th October. Details of both these activities will be circulated shortly to all N.S.W. and A.C.T. members.

Visit to Old Anlaby (previously Anlaby), Kapunda

On Sunday 14th April South Australian members of the Society, together with some members of the Friends of the Botanic Gardens, visited Old Anlaby and what may be called its estate church in Hamilton.

The church was founded and patronised by the three Dutton brothers, Frederick, Francis and William, who settled the property in 1839. It is an extraordinary piece of work. Unassuming and even uninteresting outside, the inside is a riot of high-church turn of the century decoration. The altar is complete with all the appurtenances of high church ritual, the chancel richly painted and decorated, and the nave scarcely less rich. The church has many lovely pieces imported from England, all of which were displayed for us — including silver-gilt altar furniture, embroidered altar frontals and highly coloured stained glass windows. Nor were references to nature missing, like exquisitely embroidered stylised roses on the frontals, fleurs-de-lis on the nave ceiling, and a beautifully sinuous vine on the porch window. This church is a rare treasure, particularly as it has been faithfully cared for over the years.



Having thoroughly examined the church the party was driven to Old Anlaby itself, where the garden was developed by Henry Dutton, son of Frederick, who took up residence in 1890. First we had lunch on the fine terrace and then set out to explore the homestead environs. The house, with its bow-fronted substantial verandah (added by Woods-Bagot in 1908), is particularly well related to the lawn-covered terrace on which it stands; the wall to which, in turn, sympathetically curves on its outer edge, at its centre steps lead down to the less formal garden beyond.

This area, which at the moment is largely a wilderness, is gradually being uncovered and put to order by the present owners, Mr and Mrs Shannon. Years of neglect make this a herculean task. Already a formal rose bed, a cypress arbour and the pond under the folly tower have had their former shape revealed.

Old photographs of the garden (kindly set out for us by the owners) show roses to have been a prominent feature of the garden. They were trained over chains and pillars on the terrace, set out in beds in the area beyond, and on the other side of the house festooned, again over chains, to form a "maypole". There are also numerous arches, tunnels and pergolas over which plants were obviously once trained; and these also gave form and variety to the garden arrangement.

The ruined working part of the garden was also found to be of considerable interest. There is still evidence of extensive glass-houses, shade houses, compost bins, potting sheds and raised seed beds. It is reported that twelve gardeners were once employed in the garden. The farm out-buildings are better preserved, and the courtyard containing what were once stables is in particularly fine condition. Together they present a picture of a prosperous station at the turn of the century. Other buildings on the property complete the picture; several houses, the shearing sheds, the shearers' quarters and the meat-killing pavilion are all substantial and attractive buildings of their type. Smaller artifacts such as the meal bell and the dog pens (one suspects for hounds rather than working dogs) are also evocative of the period.

Members of the Society were impressed by the efforts of the present owners in bringing back the garden to a state to match the importance of the buildings. They were grateful for the opportunity to visit the whole and for Mr Shannon's kind attention and interesting explanations of the work he is carrying out. Thanks should also be expressed to Mr Traeger who showed us over the church and to Tony Whitehill for organizing what turned out to be a thoroughly successful expedition.

(Judith Brine)

Port Arthur Weekend — Grass Roots Garden History

About fifty people attended a Garden History weekend at Port Arthur, arranged as a combined effort by the Tasmanian Branch of the Australian Garden History Society and the Port Arthur Conservation Project (National Parks and Wildlife Service, Tasmania).

Port Arthur was established in 1833 and became one of the British Empire's major penal settlements. The settlement was closed in 1877 because it had become obsolete and subsequently was severely damaged by fire, weather and human interference. In 1979 the State and Federal Governments embarked on Australia's largest on-going restoration programme. Landscaping and gardening is part of this programme as the Port Arthur settlement had included farming and grazing land, military parade grounds, ornamental and pleasure gardens.

The weekend brought together garden enthusiasts, archaeologists, historians, architects and students.

Architect Clive Lucas opened the seminar with a talk on the historic building and its setting. Every historic building is unique in relation to its setting and its curtilage, and therefore needs to be considered individually. Slides showing examples of early buildings and their gardens were contrasted with recent photographs showing the intrusion of urbanisation, a notable example being Elizabeth Bay House, Sydney. However the immediate environment of Port Arthur has remained virtually unchanged and herein lies one of the valuable historic and significant facets of the site.



ARCHAEOLOGICAL WORK AT THE
COMMANDANT'S GARDEN, 1984

Port Arthur Weekend (continued)

The seminar looked at the Commandant's House and Garden as a case study in order to gain an appreciation of the problems of the site. This complex was originally constructed in the early 1830s and was occupied by various Commandants and their families until the end of the penal settlement in 1877. Since then it has been a hotel and recently housed staff working at the site; consequently the house and garden have developed and changed and produced the dilemma of what should be kept and restored.

Historian Peter MacFie discussed researching for authenticity in colonial garden restoration. His research is a vital part of the historical plant and garden survey. Many of the Commandants of Port Arthur were members of the Royal Society and through the Society obtained much of the plant material for the settlement. This plant material included trees, shrubs, bulbs and tubers from Europe, South America, Africa and Asia. Commandants Booth, Champ and Boyd were also interested in Tasmania's native flora and included specimens in the formal front garden, such as the magnificent row of *Eucalyptus globulus* leading from the house to the jetty planted in the 1840s.

Penelope Ralph spoke on her work as a plant consultant on the plant and garden survey which was carried out to provide the essential information base for use in the conservation of the landscape. This survey involved identification of plants on the whole Port Arthur site and the setting up of an herbarium. With the help of Kathy Purtscher the plant material in the three acre Commandant's garden was surveyed and all the information drawn up relating to a fifty metre grid. The meticulous work involved in recording the diameter, height, spread, health and name of each plant was explained by Kathy. The system of plant recording used can be updated as further information comes to light, and the final result was keyed into the Australian National Grid System of Mapping, so that the drawings can be applied to the context of the Australian continent if required.

An inspection of the Commandant's garden meant that everyone could view all the work that has been carried out, including the fascinating archaeological work. This has lead to the unearthing of several previously unknown paths, wall foundations, garden beds and tree remains.

Those present also looked at the work being undertaken by conservation architect Lester Tropman on the Isle of the Dead. Lester's work involves protecting the fabric by sympathetic planting. The Isle of the Dead is, as the name implies, a small island where the dead were buried, and through time and the elements most of the old gravestones are in severe decay. Geraniums are the species known to have been planted during the convict period and most of the exotic plant material on the Island now belongs to the 1930s when there was an attempt to create a memorial garden.

The weekend was a great success. It brought together people interested in all facets of garden history and the work being done at Port Arthur is an example of some of the pioneering work currently being done in the field of garden history and conservation.

The Port Arthur Conservation Project also arranged an interesting exhibition as part of the weekend. Our thanks must go to Dr Brian Egloff and his colleagues for making this weekend possible.

(Ann Cripps)

Plants at Port Arthur

by Penelope Ralph

I had the pleasure in November of last year to attend the A.G.H.S. Conference in Adelaide and to hear the lecture given by Professor Stearn, who is one of the foremost plant historians in the world.

He mentioned two things in his lecture which I think are relevant to the restoration work here at Port Arthur. In his own imitable style he described gardens as being hospitals for plants too sick, or weak, to survive outside a cultured environment — in other words a hot house environment for lame ducks.

He went on to elaborate on this theme by drawing our attention to the plight of the plant which, by some freak occurrence in nature, develops in some way differently from its parent — for instance, a plant which may develop variegation in just one branch. The propagation of the plant material to ensure the survival of that variegation is going to have to rely on some enthusiast coming along, spotting the different branch, and propagating from that branch vegetatively to ensure that the variegation continues, since seed from the parent plant is extremely unlikely to produce another plant with the same markings.

So, out of the wilderness and into the hot house environment, or garden environment, comes the variegated plant as a cutting, which with good luck and a good root-promoting agent becomes another member of the "hospital" environment.

Humanity — particularly the gardening species — is forever on the lookout for something different. As gardeners we are looking for something different to put into our gardens, and herein lies the problem with Port Arthur — over the years plants have been developed from the original species to such an extent that many are unrecognizable as offspring of the humble species from whence they have come. Over the years countless thousands of plants have been developed in our hot house environments and then left behind as newer, bigger, brighter, taller varieties became available. Some of the older varieties lingered on in old gardens where the owners have grown older too and more resistant to change, resenting the new-fangled scentless roses, dahlias that look like soup-plates, and heavy multi-skirted fuchsias, as opposed to the elegant graceful lines of the originals.

So here we have the isolated environment of Port Arthur, a penal colony "locked away from society" for the main part of its existence, with very little interchange of plant material available beyond the Tasman Peninsula and the society in which the different Commandants moved in Hobart Town.

Plants, if they could survive the harsh living conditions of the Tasman Peninsula, which for exotic plant material would have been almost as difficult as for the exotic species of humanity which took root on these shores, tended to change very little over the years that Port Arthur was a convict settlement.

In the post-convict period Port Arthur became Carnavon, a sleepy little township into which most of the inhabitants came from the surrounding settlements, bringing with them plants from their gardens, bearing in mind that the isolation of the area still remained, and for the local residents there was little contact with the township of Hobart and the plant nurseries or Royal Society Gardens.

So the plants at Port Arthur tended to remain much the same as they were during the convict period — with a few interesting old-fashioned additions.

Slowly the fame of Port Arthur spread, and alas for our plants, so did the influx of tourists. Here was a virtual goldmine of his-

torically interesting specimens for astute gardening enthusiasts to take a hand in their propagation. Unfortunately this propagation, as I have found in the time that I have been working here, usually requires the removal of the entire plant, be it bulb, perennial or shrub. Trees and bulbs tended to survive the best — the trees were too big and the bulbs only flowered for a very short period, then wisely went underground again.

So we are left with some magnificent trees such as the araucarias, oaks, elms, poplars, etc. and some truly splendid bulbs. In the narcissus family alone we have ten different ones, some species, some very early hybrids, and with the exception of one "ring-in" in the Parsonage garden, all belong to the 19th century or earlier. One early narcissus, *N. biflorus* dates from the reign of Queen Elizabeth the First, and we have only one specimen at Port Arthur.

We have an extremely interesting perennial, namely the New Zealand *Arthropodium cirrhatum*. This plant, as far as I can ascertain, came to Australia from New Zealand with a consignment of seeds sent to William Macarthur in June 1834; while there is no certainty that the plant we have here is from that batch of seeds many of the men who held the position of Commandant at Port Arthur would have known Macarthur because of his contributions of plants to the Government gardens here in Tasmania. Furthermore it comes as no surprise to find that plant mentioned in the early plant catalogues of the period. This is a rare plant, it is a plant for the connoisseur — or for a New Zealander who knows it from its native habitat in the North Island of New Zealand, where it is known as the Cape Reinga Lily. It grows wild on the hillsides and is probably one of the last plants seen by the Maori Spirits on their final journey to the North Cape; before jumping into the great unknown where two oceans meet in a boiling, swirling mass of water.

Back to the plant catalogues. Here we have mentioned scores of varieties of fuchsias, dahlias, etc. that are now totally un procurable in modern nurseries. In some cases we hope to be able to find some of our lost treasures in some of the old gardens with some connection with the convict period, and also the Carnavon period. Fortunately there has been an upsurge in interest in the preservation of many of these old plants, and it is hoped that the restoration of gardens at Port Arthur will further increase the interest in these old, neglected "lame ducks" of long ago.

In the early days of the Colony, the settlers relied heavily on herbal plants for their medicines, perfumes and food flavouring. Lady Jane Franklin mentioned in her diary of a visit to Port Arthur, the extensive use of pot herbs as flavouring for the food she was served. Sage still grows in the Commandant's garden; rosemary used to but does no longer. In the same way a small white moss rose grows here no longer — it used to, but now there is only one surviving specimen of this rose, and it grows in the Cemetery, not in the Isle of the Dead for no roses grow there. Geraniums are known to have been planted there during the convict period, but most of the exotic plants on the island now belong to the 1930s, when there was an attempt to create a Memorial Garden there.

Old red geraniums are known to have been planted at Port Arthur during the Carnavon period — in fact they were planted along with kniphofias and philadelphus in the Accountant's Garden. Also growing in the same garden and common on the site is *Conicum maculatum*, better known as hemlock. This is an extremely poisonous plant with strong medicinal properties. The early doctors at Port Arthur would have been more familiar with its usage than we are to-day, as it is considered too deadly for use

in modern medicine. Also growing here is Digitalis or foxglove, well known for its connection with heart medicine; not so well known is the fact that it may be used externally as a poultice as an aid to the healing of wounds.

Daturas grow here and in some of the old gardens on the Peninsula. They were used in the control of bronchial asthma (don't try it!) when smoked in the form of a cigarette; they may also be applied as a poultice to relieve local pain.

Another "weed" we have at Port Arthur is *Verbascum thapsis*, or Mullein — also known as Aaron's Rod. This plant is a familiar sight, as it grows everywhere along roadsides, railway lines, and in most places where there has been or still is habitation. In the early days the flower spikes were dried, dipped in tallow, and used as a taper to light lamps. It has also been used as a herbal tobacco, rather more safely than Datura. The flowers provide a yellow dye; certainly yellow was a strong contrast to the convict's clothing.

So in the restoration of the gardens at Port Arthur we must not neglect the herbal plants. Fortunately most of them are a rather uninteresting looking lot, and hence of little interest to avid plant collectors, with the exception of the Verbascum, which was brought into the colony as a garden ornamental and which escaped — as did Digitalis, and many of the more spectacular herbal plants. Up at the hospital we have growing wild the white *Iris germanica*. If it proves to be var. Florentina we will have the herald Iris and the source of orris root, which is used for its violet perfume in pot-pourri.

One herbal plant Professor Stearn mentioned was the House Leek. It has many herbal associations, but perhaps its most intriguing use is as a planting on the roofs of "outhouses". It is reputed to protect the sitter from being struck by lightning. Was this one of our plants at Port Arthur?

In recent archaeological excavations a barrel drain has been uncovered, which I understand is supposed to be part of the earliest sewerage system at Port Arthur, but what was used before the drain was built? Did they in fact take into consideration the possibility of the sitter being struck by lightning? We are prone to sudden storms and inclement weather down here.

In talking about our plants at Port Arthur I must mention the endemic flora of the Peninsula. Lempriere wrote in his diaries of the use of native plants in the gardens. In the Commandant's Garden we have *Coprosma quadrifida* growing; this plant was known as the Native Currant Bush and the early settlers used the berries to make currant pies. There is a whole field of research into the other uses the early colonists found for the endemic flora. *Eucalyptus globulus* yields a sap which was used as a substitute for ink in the early days — was this the reason so many are found in and around Port Arthur? Even to-day there is a restaurant experimenting with this tree as a seasoning herb, and most successfully I might add.

In the restoration of the gardens at Port Arthur all these questions arise in the course of our work, which is part of the tremendous challenge of being part of the conservation project at Port Arthur.



(Note: this is the text of an address given at the Garden History week end at Port Arthur earlier this year).

Roberto Burle Marx — an Architect of Nature

by Polly Park

At first sight there appears to be little in common between Australia and Brazil, but a similarity exists in that both had been tied for a century or more to their mother countries (England and Portugal). Both felt insecure in the very different new world regions in which they found themselves and therefore dared not sever the umbilical cord and strike out on their own, taking a hard look at the very different climate and environment — until Roberto Burle Marx, and other Brazilian artists of his time, dared take the plunge into reality and pioneer a whole new Brazilian concept which, in fact, was to put Brazil on the map. For the first time Brazilian flora was featured in gardens in dramatic sculptural forms, and a Brazilian architecture — pioneered by Oscar Niemeyer — was conceived that bore no relationship to that of the mother country, Portugal. We have not yet, in Australia, dared to take a similar plunge — but more of that in a later article.

The strong nationalistic feeling that began in Brazil in the early 1900s was more than just a rejection of the motherland, it was a recognition of the sad plight of the country's underdogs — the African slaves and the American Indians. A strong social awareness came to the fore through the small literary societies that developed, and the writings which came from them. This has been a common occurrence throughout most of South America. Everywhere there is a deep-rooted consciousness, and this has affected literature and art. Abject poverty exists alongside great wealth.

When I visited Marx several years ago I was aware of this social consciousness every moment that I was with him. His conversation was constantly laced with references to "his" poor, "his" park where the poor of the city could sit and contemplate beauty, "his" play area for "his" children. Many of his finest gardens are designed for the courtyards of hospitals, where "his" people can find beauty and peace. Where else in the world would a top garden designer choose a hospital for his best work? Marx's recognition of Brazilian landscape and Brazilian flora has as much to do with his desire to make "his" people proud and as happy as possible in their land, as it does with the inevitable recognition of the native flora. Even his restored chapel on his own property, the inside of which he painted himself, was not for him (his father was Jewish, but his mother Catholic) but for the one hundred or so black workers in his nursery. We are accustomed to a history of great gardens being built for the selfish pleasure of the wealthy; this is seldom, if ever, the case in South America, where nationalism, and its resultant artistic expression, were very much linked with a social consciousness.

It is important to remember that Marx had no training at all in landscape architecture; he trained in fine arts alone. He showed me his early portraits which were very realistic, but again of ordinary people. Later he took up abstract art, and has exhibited in many parts of the world. His interest in gardening and garden design was instilled by his mother, a cultured woman with a love of art and music, as well as gardening. He didn't need formal training — he was an artist and his artistic eye was all he needed to create a great garden. It just so happened that his major successes came from designing gardens, his multitude of interests including costumes and stage settings, jewellery designing, the designing of fountains, and creative cooking. One of his two

brothers, Walter, is a former conductor of the Brazil Symphony Orchestra and now a composer, the other, Harolda, is a well known designer of jewellery, with a shop in the Copacabana section of Rio.

Flying low over Rio de Janeiro and looking down on that spectacularly beautiful city, with its glistening white Copacabana beach, the hills of Urca and Sugar Loaf rising from the sea and over all the steep peak of Corcovado mountain with its 98 foot high statue of Christ commanding a view of the entire harbour, one can hardly imagine how such beauty could be enhanced.

Yet Marx has succeeded in doing just that. For wherever you go in Rio you encounter his uniquely designed tropical gardens; along the four mile stretch of continuous parkway between Santos Dumont airport and the Pamado Tunnel in Botafago, at various modern ministry buildings, hospitals, business houses, private residences, and, perhaps his greatest love of all, in the landscaping of nine acres at the Modern Art Museum in the heart of the city.

Just as Capability Brown revolutionized the landscape scene in England by doing away with the geometrically patterned garden in favour of a more naturalistic, romantic setting, so Burle Marx has created a change in our own time by dramatizing the curvaceous lines of nature with swirling masses of colourful plants accented by taller "plastic" forms of palm trees and other tropical foliage.

His obsession with the texture and form of native rocks has led him into experimenting with rock sculpture, using vertical granite boulders grouped together in varying heights and whole beds of smooth white quartz stones artistically arranged. His interest in Aztec design is evident in the primitive granite block walls he creates, through which jets of water splash down into a garden pool. As a scientist he has explored the jungles of the Amazon in quest of new and dramatic plants. Already seven species bear his name.

Marx has designed gardens in many cities of Brazil, as well as in other countries of South America and Europe. Much of his work in Brazil and in the capital city of Brasilia has been done in conjunction with the world-famous architect Oscar Niemeyer, who believes as does Marx that architecture and landscaping must go hand in hand, each complementing the other.

Roberto Burle Marx is a remarkable looking man whose appearance, manners and moods are as many and varied as his interests. The man I first met was the artist, momentarily distracted from his work, who looked quizzically at me without a sign of recognition. He is of medium height with long grey hair almost to his shoulders, a large moustache, craggy features and enormous brown eyes that have an aura of melancholy. He wore a bright orange shirt open at the neck and rumpled grey trousers. A more unpretentious man would be difficult to imagine.

I introduced myself and at once he remembered, smiled and invited me upstairs to his sitting room where we sat and talked, surrounded by his colourful abstract paintings which, he told me, mostly derived from his close observation of leaf and tree patterns. I gave him the books I had brought him on the flora and fauna of Australia, the Sydney Opera House of which he knew a good deal, and an article with pictures of my own herb garden. It was significant that when I showed it to him he commented: "Yes, very nice, beautiful — but where are your Australian plants?" I had to confess that like most migrants I had carried my former country (America) with me, but assured him my plans for a new garden included much of the Australian flora.

Later we visited the residence of Senhora Cândido Guinle de

Paula Machado which had been completed only six months earlier yet already appeared to be well established. The house was designed by Oscar Niemeyer and the landscaping by Marx. Like all houses in the built-up area of Rio, where space is limited, it is entered directly from the street where an attractive stone wall with recessed blue and white tiled entryway ensures privacy. High on one of Rio's steepest hills, the garden is on two levels.

The lower level is an oval of grass bordered half way round by a low balustrade inside of which Marx has placed a pattern of stepping stones. Standing as we were on the street end of the lawn, where there is also a separate building for games and outdoor eating, one's eye is carried all the way around to the front of the main house above. Eight shallow grass steps faced in narrow strips of granite run the entire length of the house and as we walked up them Marx explained that they give a feeling of continuity and spaciousness to a small area as well as an importance to the house. At the top of the steps is a wide flagstone terrace which surrounds three sides of the house and from which the entire, breathtaking Rio harbour can be seen.

On the far side of the glass and cement walled house, the terrace becomes wider and looks out to a massive granite blocked wall made by Marx in an abstract pattern. The wall is eight feet high and twenty feet long with several windows resembling an ancient ruin. Through it three jets of water pound down into a rectangular pool. Low grasses and higher philodendrons border the pool.

The house, Marx explained, had been designed to capture beauty both inside and out. Behind the living room with its stark white walls and removable glass sections, muted yellow carpeting and early Portuguese and Spanish furniture, is a tiled courtyard planted all around with palms, philodendrons and banana trees. In the centre is a lovely old Portuguese marble basin with a fountain.

We next visited the Modern Art Museum which is surely the most beautiful and exciting art museum in the world to-day. Built in 1955 by Alfonso Eduardo Reidy in conjunction with Marx, it stands on nine acres of landscaped parkland which was reclaimed from the former Santa Luiza beach. Not just an exhibition hall but a centre for all forms of artistic endeavour, it contains a theatre, a lecture hall, restaurants and schools of photography, engraving, fine arts, costume designing and even book binding.

Marx has developed a complex of gardens harmonious with the surroundings and in context with the magnificent Guanabara Bay. The overall desire was for spaciousness, a place for the people of Rio to wander or sit as they choose and absorb the beauty of the surroundings. This he has achieved with wide granite walks, blocks of low colourful planting, equally large blocks of smooth white quartz stones for "texture" and an enormous lawn of two-toned grass in the same rippling pattern that one finds on the mosaic footpaths of Rio. Close to the museum are water gardens, and Marx's own vertical rock sculpture. A straight line of Royal Barbados Palms in the distance terminates the whole.

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The source of many of Marx's inspirations can be found at his nursery and week-end "retreat", Sitio Santo Da Bica, located some thirty miles outside Rio, high in the hills of Campo Grande. In the solitude of these Brazilian hills his dreams take shape.

The nursery itself is an immense operation supplying gardens throughout the Rio area with unusual tropical plants including one, *Colocasia indica Haask*, a form of elephant's ear, which is twenty feet high with giant five-foot leaves. Orchids are housed in a separate building and individual pools for water lilies are built against the side of a hill. Near the house Marx was building an outdoor cooking area with two opposite walls of granite blocks and on the top a cement pool, from which walls of water would cascade down and be re-circulated back again. Near it is the beautiful white chapel dating back to 1846 which Marx has restored for the families of his workers.

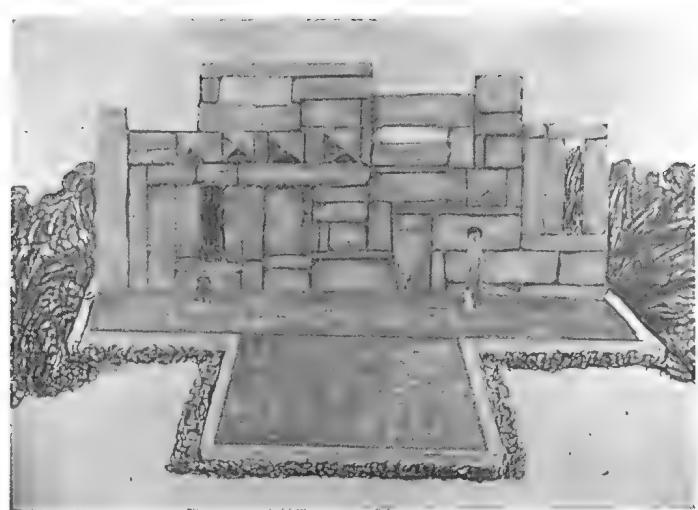
Like geniuses before him Roberto Burle Marx's search for the truth about the nature of the world is never ending. Through his knowledge, and experimentation with the elements of nature, its rocks, trees, plants and water, he has brought a new and lasting beauty to gardens the world over.

(Note: much of the material in this article was first published in **Vogue Living** in February 1970).

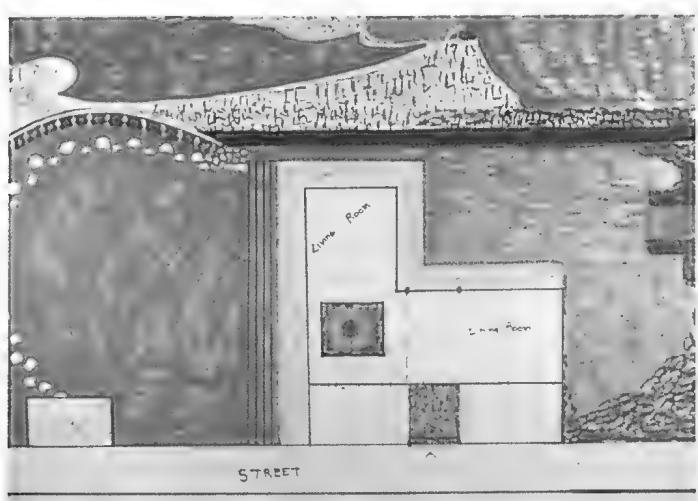


above: TRICHOCEREUS CHILOENSIS WITH FLOWERING TRUSSES OF THE INTERNAL PARASITE PHRYGILANTHUS APHYLLUS - Faranalles, Chile.
(photo: Noel Lothian)

right: THE NEAR PERFECT CONE OF THE VOLCANO ORSONO (2216m) WITH NOTHOFAGUS AND EUCRYPHIA RAINFOREST & GUNNERA CHILENSIS IN FOREGROUND - near Port Varas, Chile. (photo: Noel Lothian)



THE GRANITE BLOCK WALL IN THE GARDEN OF THE SENHORA CANDIDO GUINLE DE PAULA MACHADO.

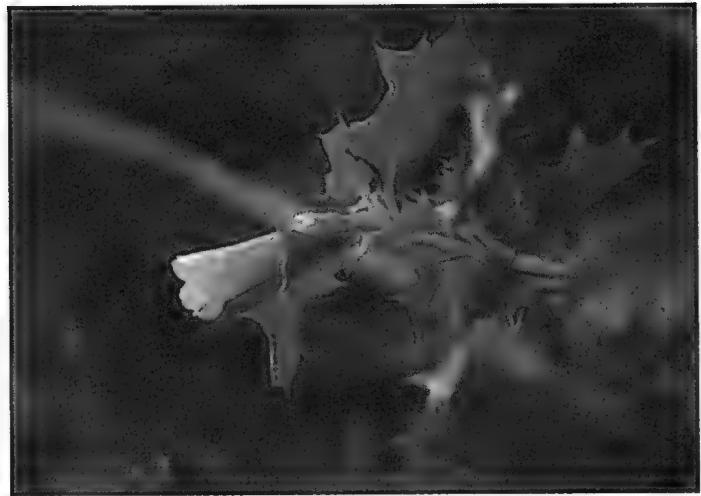


THE LAYOUT PLAN OF THE SENHORA'S GARDEN.
(Both drawings by Polly Park)





GEVUINA AVELLANA
(photo: Brian Morley)



DESFONTAINEA SPINOSA
(photo: Brian Morley)



right: COLLETIA ARMATA
(photo: Brian Morley)

below: LARGE PLANT OF OCHAGRANIA SP (ABOUT
1m ACROSS) ON NOTHOFAGUS -
near Port Varas, Chile (photo: Noel Lothian)



ABUTILON OCHSENII, THE UNCOMMON PARENT OF A. X SUNTENSE
(photo: Brian Morley)

Some Temperate Woody Ornamentals from South America

by Brian Morley

The colonising powers of South America prevented dissemination of knowledge of their vegetable resources, especially economic, as demonstrated by the well known story of the origins of the present rubber and cocoa industries in the Old World. Little introduction of ornamental plants took place through their activity. It was not until the nineteenth century that professional plant collectors and amateur plantsmen such as Richard Pearce (died 1868), James Tweedie (1775 to 1862), W. Lobb (1809 to 1863), Clarence Elliott (1881 to 1969) and H. Comber (1897 to 1969) (see Coates, 1969), began to demonstrate the charms of South American temperate plants, mainly from Chile and Argentina.

While certain species, such as lemon verbena, *Aloysia triphylla*, were introduced to Europe as early as 1784, and *Buddleja globosa* in 1774, and have become accepted favourites, others are more poorly known despite being equally attractive, such as *Vallea stipularis* or *Myrtus lechleriana* (intr. 1927). It may be helpful to make a short descriptive selection of species, arranged alphabetically, already cultivated, and with nursery availability indicated. The list is not exhaustive and I have omitted *Streptosolen*, *Lantana* and other genera.

Abutilon (1,5,6)

A. vitifolium tends to be a short-lived, softly wooded shrub, its vine-like leaves mealy grey beneath, like the young shoots, and large pale mauve flowers borne in comely groups. The cv. Veronica Tennant has large deep mauve flowers, the cv. Album white flowers.

A. ochsenii also comes from Chile but has smaller leaves and cup-shaped flowers coloured deep lavender blue with a darker eye; it was introduced only in the late 1950s. While sufficiently attractive to obtain an R.H.S. Award of Merit (AM) in 1962, *A. ochsenii* is most important as a parent of *A. x suntense* which was raised by the English plantsman Richard Gorer. This valuable garden hybrid is vigorous, floriferous, colourful, and deserves garden space. Propagation is easy by cuttings.

Aloysia (1,4,5)

A. triphylla, also known synonymously as *Lippia citriodora*, has lemon scented leaves. It is a frost tender shrub with insignificant flowers; the fragrant leaves make it useful in herb or old-fashioned gardens. Propagation is easy by cuttings.

Araucaria (4,5,6)

A. araucana, introduced in 1795 and later by Lobb in 1844, is slow growing and formal in appearance. The sexes are on separate plants. A plant to love or hate and much grown in Victorian times.

Asteranthera (1,6)

A. ovata is a creeping gesneriad which favours a shady, moist, dripping acidic bank with free drainage; it has a reputation for being difficult to grow but is worth the effort. The red tubular flowers are 5 cm long, two lipped, with a white throat. Comber introduced it from the Chilean Alps in 1926. Propagation by cuttings.

Austrocedrus (6)

A. chilensis, once called *Libocedrus*, is a slow growing columnar conifer with flattened branchlet systems, the leaves having a mossy appearance. It is a native of Chile and Argentina.

Azara (2,3,4,5,6)

All of these species are natives of Chile, *A. microphylla* and its cv. Variegata being the most commonly grown. However, try *A. integrifolia* (AM 1934), *A. petiolaris* (AM 1933), or *A. serrata* (AM 1957). These shrubs are evergreen, the leaves often glossy, the flowers conspicuously yellow and fragrant. Propagation by cuttings.

Berberidopsis (3,4,5,6)

B. corallina (AM 1901) was a Richard Pearce introduction from Chile. Its evergreen leaves and hanging racemes of coral-like red flowers make it glorious when well grown. The catch is that it has been known to be temperamental in gardens; some of the factors for success are acidic soil, ample moisture, shelter from sun and absence of hard frosts. Do try it.

Berberis (1,2,3,4,5,6)

B. darwinii, first discovered by Charles Darwin during his voyage on the "Beagle", was introduced by W. Lobb in 1849. It is a first rate flowering shrub. Less well known are *B. actinacantha* with rounded leaves and yellow flowers; *B. chillanensis* (AM 1932) with small glossy leaves and a slender, erect habit; *B. linearifolia* introduced by Comber in 1927 with orange-red flowers (*B. x lologensis* is a natural hybrid of this species with *B. darwinii*); *B. valdiviana* (AM 1939) introduced in 1902 and 1930, a large holly-like shrub with drooping yellow racemes and not grown enough. *B. buxifolia* and *B. ilicifolia* are both reasonably well known garden plants. All are easily propagated by cuttings.

Cantua (1,4,5,6)

C. buxifolia (AM 1905) with its vivid cherry coloured tubular flowers is not seen enough in gardens; it occurs in the Andes from Bolivia to Chile and is simply mouth watering!

Cassia (4,6)

C. corymbosa (AM 1933) is frost tender and probably no more attractive than several Australian species; however it is from Brazil, Uruguay and Argentina: *C. obtusa* has been distributed as the former species, but is more robust with deeper yellow flowers.

Cestrum

C. parqui has small greenish-white to yellow or brownish flowers which are fragrant at night; it is one of the most hardy cestrums, the majority of the better known from gardens originating in Central America. Cuttings are easy to propagate.

Chiliotrichum

C. diffusum is variable, but good forms are particularly attractive, with linear leaves white tomentose beneath and white olearia-like flowers. It is a small woody shrub propagated by cuttings.

Colletia

C. cruciata (AM 1959) with its flat, triangular, spiny branchlets on awkward shoots is more a vegetable curiosity than decoration. Its small summer to autumn white flowers do little to improve appearances.

C. armata from Chile, not Uruguay as in *C. cruciata*, has straight spines, somewhat pubescent branchlets and white fragrant flowers (pink in cv. Rosea, AM 1972). *C. infausta* from Chile resembles *C. armata* but is quite hairless. Shrubs to keep neighbours or unwanted pets at bay.

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Coriaria (6)

C. thymifolia from Central America into Peru grows like a suckering fern, a sort of shrubby ground cover with elegant pinnate leaves borne on frond-like stems. The racemes of black fruits are not unattractive. Other species in the genus from the Himalayas, China, Japan and the Mediterranean make an interesting and decorative group for the plant collector.

Crinodendron (1,3,4,5,6)

C. hookeranum from Chile is perhaps one of the loveliest temperate small ornamental trees, with pendulous crimson flowers and attractive leathery foliage. Its cousin *C. patagua*, also from Chile, is hardier, has less conspicuous white flowers and has not been in cultivation as long; it was introduced in 1901. You may know these under their old name of *Tricuspidaria*; they both like acid soils and moist conditions.

Datura (4,5,6)

D. sanguinea from Peru is the orange-red flowered species related to Angel's Trumpet, *D. suaveolens*. Recent workers place the tree daturas in the genus *Brugmansia*.

Desfontainea (1,3,4,6)

D. spinosa (AM 1931) is a splendid holly-like evergreen having large tubular red flowers with a yellow mouth. A native of Peru and Chile, the cv. Harold Comber (AM 1955) has more vermillion flowers. The species prefers acidic soils and can be raised from cuttings.

Diostea

D. juncea from the Andes of Chile and Argentina has only curiosity value, looking like Spanish Broom (*Spartium*) but being a verbena! The flowers are small and lilac coloured.

Drimys (6)

D. winteri (AM 1971) is a variable large shrub with leathery leaves, glaucous beneath, and loose clusters of fragrant showy white flowers. Propagation is by cuttings. This species can look beautiful en masse as a backdrop to more colourful ornamentals.

Embothrium (3,4,6)

E. coccineum (AM 1928) is an incredible orange-scarlet when in flower, the trees having a narrow habit, evergreen and best seen in sizeable groups, not singly, from a distance against a slope; otherwise the glorious flowers are not seen well against the sky or are hidden in the leaves. The form Norquino Valley is a hardier

selection belonging to the ssp. *lanceolatum*. They like it acidic and well watered.

Ercilla

E. volubilis from Chile is an evergreen climber from the pokeweed family *Phytolaccaceae*. It has purplish-white spikes of flowers and is the sort of plant none of your visitors will be able to identify! Great fun. Harold Comber reintroduced it to cultivation.

Escallonia (1,2,4,6)

Many selections from *E. macrantha* and hybrids with *E. rosea* have been made; they have become popular garden shrubs owing to their tough constitution and decorative qualities. The Slieve Donard Nursery in Northern Ireland was responsible for many of the popular cultivars. My favourites, however, are the aromatic *E. illinita* from Chile, and autumn flowering *E. bifida* (AM 1915) from S. Brazil (also known as *E. montevidensis*; both are white flowered. Not fussy about soil, easy from cuttings.

Eucryphia (1,5,6)

E. cordifolia (AM 1936) is a large columnar Chilean tree, evergreen, with heart shaped leaves and white rose-like flowers borne in late summer. It is one of the parents of *E. x nymanensis*, a variable but valuable garden hybrid. The other parent is *E. glutinosa*, which is a less lofty deciduous tree, has pinnate leaves, but also comes from Chile. I prefer the species; our native *E. moorei* and *E. lucida* both have great charm and should not be neglected.

Fabiana (1,5,6)

F. imbricata (AM 1934) is a Chilean conversation piece in that it looks like heather but is a distant cousin of the tomato! The small tubular white flowers are profuse in summer; a lavender flowered form is also available.

Feijoa (2,3,4,5,6)

F. sellowiana (AM 1927) is perhaps grown more for its fruit than as an ornamental, but this native of Brazil and Uruguay introduced in 1898 is useful in warmer situations, although being somewhat frost tolerant.

Fitzroya (6)

F. cupressoides, introduced by both Lobb and Pearce, is a small coniferous tree with distinctively white banded scale-like leaves borne in threes on drooping branchlets. It is related to the Tasmanian endemic *Diselma*.

GARDEN LOVERS TOUR OF FRENCH & ENGLISH GARDENS - JUNE 1985

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Julie Keegan,
7 Cove Street,
Watsons Bay, N.S.W. 2030.
Telephone (02) 337-1147

Fuchsia (4,5,6)

The frost hardy *F. magellanica* was introduced in 1823 and has long been cultivated in Australia together with several hardy cultivars, such as *F. cv. Riccartonii*, *cv. Variegata* or *cv. Alba*. Still a valuable garden ornamental.

Gevuina

G. avellana is a Chilean protead with not unattractive glossy foliage, creamy panicles of flower, reddish fruits, but often the most lop-sided of habits. A moist woodland setting is ideal; its seeds are edible.

Jovellana (1,4,6)

These plants are closely allied to *Calceolaria* but lack the pouched lip of that genus; *J. violacea* (AM 1930) is easily raised from cuttings, has small violet flowers and comes from Chile. It is a small shrub.

Lapageria (1,3,4,5,6)

L. rosea requires a cool acidic soil, good drainage but ample moisture and reasonable shade to produce some of the garden's loveliest waxy white, rose to crimson pendulous clusters of flowers each to 7 cm long. The evergreen leaves are borne on thin but tough twining stems growing to about 4 m tall if trained.

Laurelia

L. serrata, Chilean Laurel, has leathery, boldly serrated evergreen leaves, is a good-looking tree given frost protection, and its parts are deliciously aromatic when crushed. For the botanists it is a member of the *Monimiaceae*; definitely an "in" plant.

Lomatia (6)

L. ferruginea (AM 1927) from Chile and Patagonia is perhaps the finest species in the genus; its delicate ferny leaves and reddish velvet indumentum, coupled with pale brown and scarlet flowers, make it a handsome small tree. *L. hirsuta* (AM 1956) was introduced in 1902, has large leathery leaves, cream flowers and seems to be hardier than the other Chilean species, *L. dentata*, with holly-like foliage and greenish flowers.

Mandevilla (4,5,6)

The white periwinkle-like flowers of *M. suaveolens* (AM 1957), syn. *M. laxa*, are fragrant and borne on this sun loving climber in summer. Easy to grow and strike from cuttings, this introduction from Argentina is good value.

Margyricarpus (1,5)

M. pinnatus is a relative of the roses from the Chilean Andes. It is essentially prostrate, has evergreen pinnate leaves and conspicuous pearly berries.

Maytenus (6)

M. boaria is a graceful shining evergreen tree not unlike *Phillyrea*, introduced in 1823. It is not common and deserves to be more widely grown.

Mitaria (1,6)

M. coccinea (AM 1927) is a temperate spreading epiphyte requiring shelter, but amply repaying attention given, with tubular scarlet flowers and small glossy green leaves. It is raised from cuttings and prefers acidic soils. It is related to our own *Fieldia* but comes from Chile.

Myrtus (1,3,4,6)

M. apiculata (*M. luma*) from Chile has the most exquisite cinnamon bark and smooth cream trunk; the small aromatic dull green leaves are evergreen, the flowers white, the fruits red turning black. The other notable species is *M. lechleriana* (AM 1945)

also from Chile, with vaccinium-like leaves, kipper coloured when young, copious flowers, and red then black fruits. This was not introduced until 1927. *M. cheken* with undulate leaves and *M. ugni* (AM 1925) with pink flowers and reddish brown fruits are both Chilean too, and perhaps better known. The wiry prostrate *M. nummularia* from temperate Chile and Argentina won an AM in 1967, but I have never been impressed with this plant.

Nothofagus (6)

N. antartica, the deciduous Antarctic beech, often suffers from a curiously twisted habit which is at once ungainly and painful. *N. dombeyi* with larger evergreen leaves, also from Chile, is altogether more elegant, as is *N. obliqua* and *N. procera*, all introduced to gardens this century. They all deserve a place in the larger garden and will surprise you with their rapid growth — quite unlike the European beech.

Pernettya (1,3,4,5,6)

P. mucronata (AM 1961) from Chile and Argentina is a tough attractive ornamental forming low thickets, suitable as naturalised ground cover. Several cultivars exist with different berry colours, and this species is a parent of the bigeneric hybrid *x Gaulnettya* (with *Gaultheria shallon*). Several other South American pernettyas are in cultivation for the enthusiast.

Philesia (1,6)

P. magellanica (AM 1937) is a lovely suckering, wiry evergreen related to the lilies, with remarkable showy tubular crimson flowers. It likes acidic, moist conditions, shelter and good drainage; it can be fussy.

Pilgerodendron (6)

P. uviferum (once called *Libocedrus tetragona*) is a small tree, slow growing, with a stiff habit, its branchlets having a quadrangular appearance on account of the four-ranked leaves. It is a Chilean plant and uncommon in gardens but seems frost hardy.

Podocarpus (2,4,6)

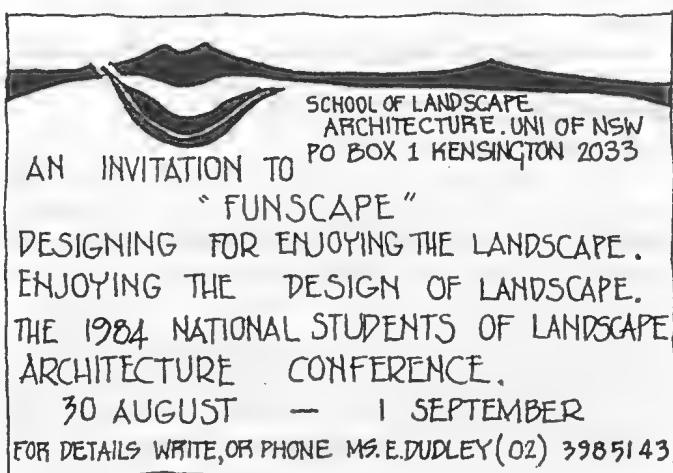
P. andinus which is yew-like, and *P. salignus* with drooping branches and long leaves are both Chilean evergreens. Both form large shrubs or small trees; I prefer the latter species.

Rhaphithamnus

R. spinosus from Chile is a sharply spiny shrub with small evergreen leaves, small pale blue flowers and deep blue fruits. It is a cousin of the verbenas, and not unattractive.

Saxegothaea (1,6)

S. conspicua occurs in Chile and Patagonia; it has interesting botanical features which associate podocarps with araucariads.



I find its loose habit rather irritating; grow it for the associations of the generic name!

Schinus (2,4,5)

The pepper tree is a familiar landscape component in arid Australia; as an evergreen shade tree it is graceful, tough and recovers from fire, having dense sappy wood. It is long lived.

Solanum (6)

S. valdiviense (AM 1931) is a pale mauve flowered shrub, vigorous and frost tender; it was introduced to gardens in 1927 by Comber. The climbers *S. crispum* with blue flowers and *S. jasminoides* with white flowers are also worthwhile.

Sophora

S. macrocarpa (AM 1938) from Chile is not unlike the New Zealand Kowhai, *S. tetraptera*, but the leaves have fewer leaflets, appearing coarser, and flowers deeper yellow.

Tibouchina (2,6)

T. urvilliana, often confused with *T. semidecandra*, is a native of Brazil and is reasonably well known in Australian gardens; its velvety melastome leaves and vivid purple flowers are sumptuous.

Vaccinium (6)

V. floribundum (AM 1935) from Ecuador has long been cultivated as *V. mortinii*. It is an attractive dark green evergreen shrub, with purplish young growth. The densely arranged pink racemes are followed by edible red berries. It is surprisingly hardy for its natural provenance.

Vestia

V. foetida (*V. lycioides*) is an evergreen shrub with satisfying yellow tubular pendent flowers and capsicum-like fruits which turn blackish. It requires some frost protection, but grows easily from cuttings.

Villaresia

V. mucronata is a large evergreen holly-like shrub with creamy flowers followed by black fruits. Older plants lose the spiny toothing on the leaves. It is worth cultivating, belonging to the Icacinaceae; another native of Chile.

Weinmannia

W. trichosperma (AM 1927) from Chile is a pinnate leaved evergreen shrub, with dense racemes of white flowers followed by reddish fruits.

Key to nursery availability

1. K. Gillander, Tasmania
2. Swane's Nursery, New South Wales
3. Bert Chandler, Victoria
4. Din San Garden Centre, Victoria
5. David Thompson, South Australia
6. Hilliers Nurseries, U.K.

References

Bean, W.J. (1970-80), "Trees and shrubs hardy in the British Isles", vols 1-4, ed.viii (Murray, London)
Coats, A.M. (1969), "The Plant Hunters" (McGraw-Hill, New York).



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Garden Study of Camden Park

A grant has been made available from the National Estates Program for 1983-84 for a conservation study of the garden and grounds at Camden Park, N.S.W. The study will be carried out by the Landscape Section of the Government Architect's Branch, New South Wales Public Works Department, with the assistance of botanists from the Royal Botanic Gardens and National Herbarium Sydney. The project will be supervised by the Environment Protection Division of the Department of Environment and Planning.

The garden and grounds at Camden Park form a historic setting to the John Verge designed house, which has been occupied by the Macarthur family since its construction in 1833. John Macarthur's son, William, a keen plantsman with a flair for estate management and an interest in economic botany, developed a major nursery adjacent to the large garden, which displayed both diversity of form and richness of species.

The study will document the current heritage status of this important colonial garden complex, with a view to formulating overall conservation management guidelines.

Documentary material held in public and private collections will be located and analysed to record the development of the garden and grounds, from their establishment to the present day.

A comprehensive survey of the complex will record the garden layout, planting, artefacts, and structures, including the lower garden where the nursery was located. Analysis of the survey data together with the historical research material will enable an overview of the estate's evolution. Some archaeological investigation may be needed to establish the validity of principal elements.

Once the site has been analysed and the significance of the whole and its component parts established, conservation policies will be developed and options for future management established.

The proposed study of the garden and grounds at Camden Park is a necessary prelude to the conservation of this important item of our environmental heritage.

(reproduced with permission from "Heritage News", published by the Heritage Council of New South Wales, Vol 2 No 4 (Summer 1984).)

BOOK REVIEWS

The Adventurous Gardener

by Christopher Lloyd; published by Allen Lane; recommended retail price \$22.95.

reviewed by John Patrick

Christopher Lloyd is one of a small group of garden writers who never fail to please me. His writing contains far more than valuable knowledge about the plants he chooses to grow (or not to grow as the case may be) for he possesses a style which is amusing, readable and filled with boyish enthusiasm. In combination with his immense experience of plants this makes any of his works an absolutely vital component of our gardening bookshelf. **The Adventurous Gardener** won't disappoint any of his admirers.

It is vintage Lloyd; imaginative, observant and eloquent but perhaps most important of all, especially in the light of the title, adventurous. This last quality is so important since it underlines the difference between him and many fellow gardeners, especially, I might suggest, in Australia. Viewing the majority of suburban gardens there is little evidence of garden owners experimenting either with design, plant manipulation techniques or planting combinations, the Australian suburban plot being generally designed to a formula of a few distinctly colourful shrubs and trees around a central lawn of poor quality.

Such a scene would give no pleasure to Christopher Lloyd, for he possesses an investigative approach to his plants, not their cultivation alone but to their place in history and the development of our gardens as well as our broader culture. Whether he writes about trees, shrubs, bulbs or annuals he offers reasoned observations imbued with a nice degree of subjectivity.

The Adventurous Gardener follows a similar style to his earlier work **The Well Tempered Gardener**, thus there is no single theme but a series of accounts of his experience with particular plants or plant habitats. This approach has, of course, the great danger that it becomes a dull narrative, as one brief account follows another. Lloyd is too clever for that, revealing remarkable ingenuity in weaving together his account.

Being "adventurous" in England, of course, means that he grows plants which many might view as half-hardy in that climate. However, being half-hardy in England generally makes them admirably suited to many Australian environments. Moreover, Lloyd is such an experienced plantsman that he is willing to offer a viewpoint on aspects of gardening from which others shy away.

Thus, in response to a letter from a lady near Southampton, he guides us to solutions for the site where large trees dominate a small garden, a scene with which many of us are all too familiar. Not all the plants of his recipe are available in Australia, but there are sufficient to provide those suffering similar troubles with a direction to follow.

Visitors too receive his appraisal and generally come out of the ordeal with satisfactory comments, but there are inevitable exceptions. Since I am currently attempting to persuade owners to open their gardens to the public I know how difficult it can be to achieve this objective. Yet Christopher Lloyd obviously relishes visitors, enjoying the games he is able to play with them as much as the overheard comments that amuse him. The comment made in the loud-enough-to-be-overheard can, of course, provide

the gardener with valuable information and an approach to a problem not previously considered.

For the lovers of grey foliaged plants, as fashionable at the present time in Britain as they are here, there is an extensive account. Seeking out details about this group is not easy. Mrs Desmond Underwood's remarkable book on the subject is, sadly, out of print and as rare as hen's teeth in second-hand bookshops. If available in booklists it is gone by the time one contacts the dealer and it is nearly always too expensive anyway. Loving hot, sunny locations grey-leaved subjects are ideal for use in many Australian gardens, but significantly they do not have to be used alone for as Christopher Lloyd observes, "They make a splendid setting and context for other colours. The fulminating red of *Lobelia cardinalis*, the bright, insistant pink of *Nerine bowdenii*, the softer rosy mauves of Michaelmas Daisies. And one of the most effective partnerships I have ever stumbled upon is of the single white Japanese Anemone against a background of a voluminous *Artemisia arborescens*".

From propagation to planting design, from annuals to trees, Farrer to Jekyll, Christopher Lloyd is a constant source of amusement. He is, I believe, the most easily assimilated of all modern garden writers appealing to both the connoisseur and the dabbler. I enjoy his writing and recommend **The Adventurous Gardener** without reserve to all who have the slightest interest in gardening.

Grow Native; creating an Australian Bush garden

by Bill Molyneux; published by Anne O'Donovan Pty Ltd, Melbourne; recommended retail price \$8.95

reviewed by Tim North

Each short piece in this book was originally published in article form in the Melbourne "Age", over a period of three and a half years. For the purpose of the book they have been arranged in groups under collective titles such as "Journeys through Bushland and Wilderness", "Planning and Preparation" and "Winter Flowers".

It is, therefore, a more or less unstructured book, but none the worse for that — in fact I found it a delight to read, for the author manages to combine a great deal of useful, practical information with an easy narrative style. He states that he wanted "to convey a sense of what I had gained from communion with entities of the wild and natural order and from communion with the self. I tried also to convey a sense of "here is what can be done", rather than "his is what you should do"."

This approach makes a welcome change from the type of "grow native" book that preaches that Australian plants are the **only** plants for Australian gardens and that everything exotic should be banished. So even the confirmed "non-native" gardener will find delight in this book, and will hardly fail to be warmed by Bill Molyneux's communion with his native bushland, his wide-ranging knowledge (gained by personal contact and observation) of the plants that grow there, and his common-sense approach to using them in the garden.

He also dispels the myth that native plants need no maintenance, that all one has to do is to plant them and forget them; they need pruning, feeding and keeping free of pests and diseases like all other plants. But a bush garden, as he points out,

if well designed and planted, can mean lower maintenance "by virtue of the exclusion of vast grassed areas and non-involvement of planting and subsequent removal of annual beds".

Bill Molyneux has fully achieved his stated aims: not only does this book show us what can be done, it will inspire many to try for themselves. At the extremely modest price of \$8.95 it's splendid value — I suggest you go out and buy a copy now.



My Favourite Gardening Book

This is the first in a series of articles in which a number of practised and discerning gardeners will describe the gardening book which is their personal favourite. In this first article Dame Elisabeth Murdoch writes about her choice.

For the keen amateur gardener there is a wealth of fascinating books to inform, instruct and inspire one, and I rely on many of them for reference and guidance. But for sheer pleasure and satisfaction in reading my first choice is "The Education of a Gardener" by Russell Page.

It covers a lifetime of fascinating and varied experiences and the remarkable achievements of one of the greatest landscape gardeners and architects of our times, who, it seems, is also a particularly endearing character. He writes so clearly and felicitously that one readily understands how he approaches designing and re-designing gardens and their environs of every size and kind.

With Russell Page's sensitivity to and brilliant perception of all aspects and the potential of each situation, he has created beautiful, noble and grandly imaginative gardens in many parts of the world, and is, in my humble opinion, a guiding light which leads us to a higher plane of awareness of what landscape gardening is all about. Indeed the history of his education has made a significant contribution to the amateur gardener's understanding and contains so much to delight me that whenever I need refreshment of spirit I turn to it with gratitude and intense pleasure — chacun a son gout!

Elisabeth Murdoch.



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Cottage Garden Plants

by Mary Davis

Heather and Roy Rumsey, in their 1984 rose catalogue, write of "Old Blush, 1752 (Parson's Pink China, Common Monthly, etc); very dependably recurrent flowering, hardy and beautiful. If there is one pink rose left standing where an old farmhouse has faded away, this will most likely be the rose".

Recently we purchased an old stone and timber farmhouse on the outskirts of Sydney, which, after subdivisions, was left standing on three quarters of an acre of good arable land supporting several mature trees, and at the time of purchase, a jungle of horticultural rubbish.

Under a large Coral tree and adjacent to a neglected four metre high *Duranta* hedge — both now gone — was discovered an old rose with a faintly fragrant flower, struggling against all that root opposition. Extracted from between large tree roots it had virtually no feeder roots visible as it broke in two, but optimistically both halves were potted into good sandy loam to encourage root development.

You guessed it — Old Blush it certainly was and is, and what a charmer it has turned out to be. "Common Monthly" is an apt name, for it barely rests in its recurrency of soft pink china blooms and now has become an important focal point in the new cottage garden being created to enhance the old farmhouse.

I am delighted with the compact, bushy habit and have planted it in combination with pink, grey, blue, mauve and white flowering plants; BUT — the pinks are all lavender pinks.

Aster frikartii, *Brachycome multifida* and Barr's Pink Aster provide the daisy type flowers which are so much part of cottage gardens. There are the old purple flags, autumn-flowering *Iris germanica*, as well as some modern tall bearded iris — Wedding Vow, Pink Taffeta and Full Tide — and nearby the grey leaved blue-mauve flowered *Caryopteris incana* (a semi-deciduous sub-shrub) and *Scabiosa farinacea* — both tone in beautifully. The bed is edged with hummocks of clove pinks; *Dianthus Sally* and Mrs Sinkins are close to Old Blush, and under the rose is the ground covering *Geranium incarnum* contrasting with *Nierembergia rivularis*, which is spreading nicely.

Important harmonizers are *Salvia leucantha*, the purple flowering Mexican bush sage and the silvery grey feathery *Artemisia absinthium*, together with a very soft blue, narrow leaved *Salvia* that I have yet to identify, but love for its heavenly blue labiate flowers which occur throughout summer and autumn.

During this period some lovely white and lavender pink perennial phlox bloom to compliment the rose, and now beginning to spread along the northern edge of the bed is one of my favourite blue groundcovers *Convolvulus mauritanicus*. I enjoy this combination of plants every day on my way to the mail box for — you guessed it — yet another plant catalogue!



The Leura Gardens Festival

The Leura Gardens Festival, held in October each year, is one of the principal events in the calendar of Australian garden Festivals.

Thousands of visitors from all parts of New South Wales, as well as other States and overseas countries such as Japan and New Zealand, come to Leura to inspect the gardens open to the public during the Festival. This year the dates will be from Saturday 6th October to Sunday 14th October, when nine gardens will be open each day from 9.30 am to 4.30 pm.

Commenting on the organization involved in promoting such an important event, Mr John Spellacy, Chairman of the Festival Committee, said Festivals such as the Leura Gardens Festival do not happen overnight, but are the result of many months of planning and preparation both by the Festival Committee and by the garden owners, who work throughout the year to bring their gardens to the peak of perfection. Without the garden owners and their gardens there would be no Festival, Mr Spellacy said, and we owe a debt of gratitude for their generosity and public spirit in making their gardens available for all to see. Perhaps a sign of public appreciation may be found in the almost total absence of littering or vandalism, in spite of the large numbers of people of all ages who visit the gardens. A truly remarkable phenomenon, in which the gardens are treated with the respect they deserve.

The task of the Festival Committee commences in February and continues until October. Many meetings are held to plan the necessary organization and publicity, not the least of which is the production of the prestige colour brochure for which there is a continuing demand both before and during Festival time.

The organization culminates in the rostering and supervision of over 300 voluntary workers to act as gatekeepers and perform other necessary duties. The willingness of so many local citizens to make themselves available for this work is typical of the wonderful community spirit which has always been associated with the promotion of the Festival.

From the many enquiries already received, this year's Festival promises to be another outstanding success, and will result in a substantial addition to the funds of the Blue Mountains and District Anzac Memorial Hospital, to which all proceeds will be donated.

Admission charges will be \$1.00 per adult for a single garden or an inclusive ticket covering all nine gardens for \$3.00. Children are half the adult charge.

For further information and literature write to the Hon. Secretary, PO Box 131, Leura, NSW 2781, or phone (047) 57 1318 or (047) 59 1963.



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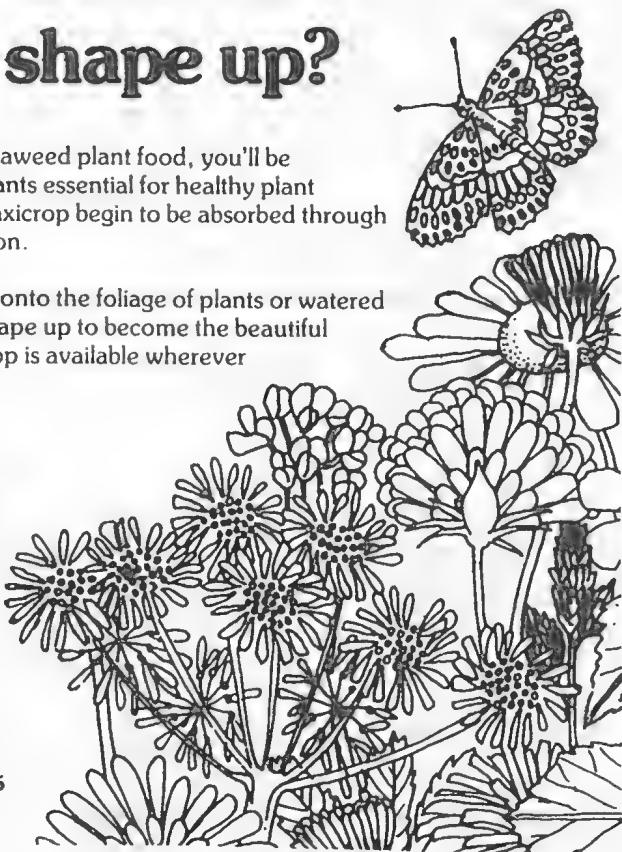
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Ornamental Spurges

by Tim North

The word "spurge" comes from the old French "espurge", which means literally to expurgate. This, no doubt, is a reference to one characteristic of these plants, the thick, sticky, latex-like sap which exudes from cut stems, and which can cause irritation and even disability if it touches sensitive parts of one's body, especially the eyes.

The generic name is *Euphorbia*, which in Greek means "well-fed". It is said that the first *Euphorbia* was discovered on the slopes of Mount Atlas by King Juba II of Mauritania, who named it after his physician Euphorbus, who was presumably a somewhat portly fellow. It is an amazing genus, of something like 1,600 species; many of them are succulent and some of bizarre appearance, which often results in them being referred to, quite incorrectly of course, as "cacti". Others are jungle shrubs, like the familiar Poinsettia, and others thrive on hot, dry banks in the Mediterranean area.

My first encounter with Spurges was some thirty years ago, in England, when I acquired a garden in which were growing some rather undistinguished looking plants, with dark green leaves and dullish green bracts. This was a biennial, *Euphorbia lathyris*, the Caper Spurge — so-called because it produces small green berries that resemble capers. I was told that it was a most useful plant because it kept moles out of the garden — those velvety little creatures that burrow furiously, throwing up neat "molehills" of soil all over the lawn. The plant didn't impress me very much and the moles didn't mind it at all, so I was rather inclined to agree with William Robinson, who dismissed all the Spurges as being "poisonous, and best kept for botanical collections".

It was not until much later that I started to realise how many valuable, distinctive, beautiful and "definitely different" plants there were amongst this strange tribe. The ones I wish to write about are either sub-shrubs or herbaceous perennials; they are easy to grow, accommodating as regards situation and soil type, no insects will eat them, and they are perfectly hardy.

Let me say that to like Spurges you must like greens — soft yellow-greens, flinty blue-greens, grassy greens, forest greens, for these — and that lovely chartreuse yellow so beloved of flower arrangers — are the pre-dominant colours. The flowers themselves are insignificant, but are surrounded by conspicuous, usually yellowish bracts which persist for several weeks.

The Spurge that you are most likely to come across in nurseries is still generally known as *Euphorbia wulfenii*; it has, however, now been relegated to the rank of sub-species, and is correctly *E. characias* subsp. *wulfenii*. It is a tall-growing, more or less woody, sub-shrub that can sometimes reach a height of two metres, though it is more likely to stop at about one and a half metres. Unlike many Spurges it will grow in partial shade. The foliage is dark blue-green, willow-like, and the rounded umbels of yellow-green bracts are borne in spring and early summer. *E. characias* itself is rather smaller, and in flower can be distinguished by the dark brown spots in the centre of the inflorescence; E.A. Bowles called it the "Frog Spawn Bush". It is native to the western Mediterranean region.

E. mellifera, so called because of the abundant amount of nectar in its flowers, is almost as tall, and has broader leaves, something like those of an oleander, apple green in colour with a distinctive golden centre vein.

E. griffithii, from western Asia, will grow to something under one metre, and is a good coloniser, for the roots will spread out, but it is seldom a pest. It is distinctive in that the bracts, instead of being

greenish-yellow, are orange-red and there is a form, now more common than the type, called "Fireglow" in which the bracts are a brilliant brick-red.

E. myrsinites, from southern Europe, is a good rockery plant, and loves to be wedged in between stones. In summer it will produce long, rather fleshy, trailing stems clothed with glaucous leaves, which will drape themselves over a bank or a wall. The following spring these same stems will produce heads of an intense lime-green. It associates brilliantly with bright, spring flowering rock plants such as Aubrieta.

E. rigida — sometimes referred to as *E. biglandulosa* — comes from Greece, and has pointed glaucous leaves and flower heads that resemble those of *E. myrsinites*. Instead of trailing stems, however, it has erect ones that will reach a height of about half a metre.

E. polychroma — which used to be *E. epithymoides* (the Spurges have had rather a mauling at the hands of the taxonomists) — comes from central and southern Europe. Its common name is the Cushion Spurge, for it forms neat hassocks of greenish-gold with the now familiar greenish-yellow bracts. It flowers in late spring, just as the daffodils are starting to fade, and will continue flowering right into summer, forming fuzzy orange fruits about mid-summer.

Larger, but otherwise similar, is *E. palustris*, perhaps the most spectacular of the spring flowering Spurges. It produces huge heads of yellow-green, and in a moist soil will reach a height of a metre or more. The foliage turns yellow and orange in autumn. Graham Thomas suggests it be planted with purple irises.

E. robbiae, from Asia Minor, is another coloniser. Its wandering roots will form plantlets, which turn into dark green rosettes, above which stand the rather open spires of greenish bracts. It is a bright and well mannered ground cover that doesn't mind shade or a poor soil.

E. amygdaloides, the native English Wood Spurge, is similar to *E. robbiae*, and some authorities now regard it as the type, with *E. robbiae* correctly a sub-species. It is, however, inferior in most respects, though Beth Chatto, in her delightful Essex garden (a real plantsman's garden), has used it to great effect under deciduous shrubs. It is inclined to be invasive, but if restricted to thinnish soils probably will not become a pest. There is a form with purplish leaves and stems, that make an unusual contrast to the yellow-green bracts.

E. cyparissias, the Cypress Spurge, is disarmingly graceful, with deeply cut soft green leaves and slender stems, for it is a real rambler. Nevertheless, it is a most attractive plant, and a wonderful ground cover if it can be contained — in America it is used for covering the embankments at the edges of highways. The flower heads are excellent for cutting, and the whole plant turns bronzed in autumn.

E. sequierana niciciana, from south-eastern Europe, is a plant of comparatively recent introduction, that has the attributes of a good perennial plant — slender stems well set with leaves, a tidy and compact habit, and large terminal heads of small sulphur-yellow bracts which are produced over a long period.

The Spurges have for long been among the garden Cinderellas; they have seldom made the headlines, and so are not often to be found in the nursery trade. They are easily raised from seed — except *E. palustris* which seldom sets seed — but collecting the seed is tricky, for the seed capsules are explosive. The seed must be collected at the first sign of the capsules turning a paler colour — leave it too late and the seeds will have been flung far and wide. The Hardy Plant Society in England has a fairly comprehensive collection, and even has a Euphorbia study group, with a test garden of more than sixty kinds.

Established clumps can be divided with a sharp knife, either in autumn or early spring. Tip cuttings of most Spurges will root in a coarse sand, but the cut ends will drip with sticky sap, and should be dipped into dry sand or peat to staunch the wound.

These Spurges have much to commend them as garden plants, and are firmly established in my personal "top twenty" of hardy perennials.

Ken Gillanders' Woodbank Nursery in Tasmania lists four — *E. amygdaloides purpurea*, *E. griffithii* "Fireglow", *E. polychroma* and *E. characias wulfenii*. I will be interested to hear of any other nurseries growing Spurges.



New Zealand's only surviving Wardian case?

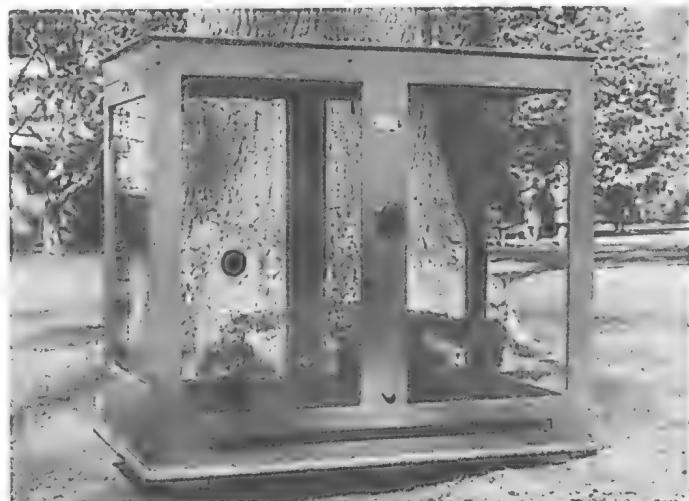
by John Adam

Mystery still surrounds how the University of Auckland Botany Department would have acquired a Wardian Case. It was rediscovered early last year under some stairs in the attic of the old Biology Building. After removing the dust of many years a somewhat fragile timber and glass structure materialised. Painted light green, at some recent time probably, the case measures 106.5 cm long, by 58 cm wide, by 95.5 cm high. The Wardian Case is ventilated by circular vents, some located in the glass panes, blocked with cork. Two removable wooden slats on the top of the case provide further ventilation. Other attachments, including a brass bar, as seen in the photograph, at the base of the case have no known useful purpose.

I have found regular references to the use of the Wardian Case in New Zealand's 19th Century horticultural and botanical archives. No drawings or photographs from this period are known to survive showing the live plants being carried to or travelling on the deck of ships.

The wood and glass case was named after Nathaniel Bagshaw Ward (1791-1868), a Whitechapel surgeon and amateur naturalist who was responsible for developing the case about 1836, and who later wrote a book in 1842 entitled "On the Growth of Plants in Closely Glazed Cases". Further information about the Wardian Case can be found in the two books by D.E. Allen, "The Victorian Fern Craze" (1969) and "The Naturalist in Britain" (1976) and in K. Lemmon's book "The Covered Garden" (1962).

Continued foot of page 166



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Soil Association Conference.

The Soil Association of South Australia Incorporated will be holding an "Organic Festival and Conference" in Adelaide from 1st to 4th November 1984. Speakers include Prof. Dr. H. Vogtmann, President of the International Federation of Organic Agriculture Movements, Dr. R.D. Hodges, from Wye College (University of London), Prof. J.V. Lovett, Professor of Agricultural Science at the University of Hobart, and Bill Mollison, the well-known co-designer of "Permaculture". Further information is available from the Hon. Secretary, Soil Association of S.A. Inc., GPO Box 2497, Adelaide, SA 5001.

Australian Plants in America.

Paul Chambers, a 30 year old horticulturist and a former gardener at Government House, Melbourne, has established a nursery, Australian Native Landscaping, at Phoenix, Arizona. He is growing more than ninety different Australian native plants which are sold through outlets in Arizona, California and Texas. These plants have been proved exceptionally well suited to the desert conditions of the south-west, where previously only a limited range of native plants and some exotics have proved successful. Mr Chambers is now planning to introduce plants from the colder regions of Australia for more northern gardens.

An Invisible House.

A house made of glass blocks with a forested interior courtyard, and densely landscaped with trees and shrubs around the exterior, has been built in a suburb in New York City — so that it is difficult to see where the house begins and the garden ends.

"No-mow" compounds.

Two compounds which retard growth as long as eight weeks by slowing cell division at the base of the grass blade are now being marketed in the U.S.; they are "Gro-Tard" and "Cutless". Because the compounds are not translocated to the roots, the roots keep on growing.

Sewage Sludge.

America's waste treatment plants produce 10 million tons of dry sludge every day. Sludge is now being composted in closed containers with controlled temperatures and air circulation, then mixed with sawdust, bark, straw, or other carbonaceous material, and composted for two weeks. After that it is "cured" in another tank for about three weeks. Composted sludge is being used as a container medium, mixed with equal parts of peat or bark, and either perlite, vermiculite, sand or shredded styrofoam. For making garden beds the general recommendation is a 3 inch layer of sludge mixed to a 6 or 8 inch depth. A bacterial compound has now been developed which facilitates the removal of cadmium and other heavy metals. Sludge is also economical — in the U.S. it is about one quarter the cost of peat moss and about one seventh that of perlite.

(from "The Avant Gardener")

Granulated Straw

A new potting medium being used in the U.S. is wheat or grass straw ground to dust-size particles, impregnated with urea-formaldehyde resin, and finally subjected to high pressure at 180 degrees Fahrenheit to make sterilized cubed particles. When added to soil or soil-less media the resin is broken down by micro-organisms, which slowly release the nitrogen. Because it takes time for the micro-organism population to build up, some nitrogenous fertilizer is added when planting, in the same way as when ordinary straw is used. Dr Robert Ticknor of the Oregon State University Willamelli Experiment Station reports that the best container mix for many plants consists of 70% granulated straw and 15% each of peat moss and pumice by volume, plus Osmocote and trace elements.

(from "The Avant Gardener", published by Horticultural Data Processors, New York).

Believe it or Not!

We are indebted to a reader in Alice Springs for the following story (which, however, he says he is unable to authenticate). America and the rest of the world, it is claimed, were able to discover the exact location of some of the Russian atomic tests because of the rare fern that only grows in a very small area of Russia suddenly appearing all over the world, the spores apparently having been sent into the upper air by the explosions.

New Zealand's only surviving Wardian Case? (continued)

and "The Golden Age of Plant Hunters". The case held by the University still retains the name of the firm who made it; W. Watson and Sons Ltd, 813 High Holborn, London.

Food, timber and ornamental plants were supplied from Australia and Great Britain to fill these cases in exchange for the rich new flora that was being discovered and botanically described in New Zealand for the first time.

Are these cases still being used in the world to-day? The last recorded use of the Wardian Case to arrive at the Royal Botanic Gardens, Kew, took place in 1962 when plants were sent to Fiji, according to the book "Survival or Extinction" (1979).

Any additional information on the origin of this Wardian Case and especially other cases known to survive intact in New Zealand and Australia would be appreciated by the writer.

Our Native Plants in Danger

Dr John Leigh, of the CSIRO Division of Plant Industry, and one of the co-authors of the book "Extinct and Endangered Plants of Australia" (see article in this Journal, April 1984) will be lecturing on this subject on Friday 21st September, at 8.00 pm, at the School of Horticulture, Parkes Street, West Ryde, NSW.

This lecture is being given to the NSW Region of the Society for Growing Australian Plants, but all visitors will be welcome.

The Society also has a number of audio-visual programmes available on loan, covering various aspects of growing and propagating Australian native plants. Further information on these programmes is available from Mr Brian Walters, Castlereagh Native Plants, R23 West Wilchard Road, Castlereagh, NSW 2750.

garden market place

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"In Praise of Trees" Exhibition

A second "In Praise of Trees" Exhibition will be held this year in Bowral (in the Community Hall, Bendooley Street) on the 6th and 7th October, from 10 am to 5 pm.

This Exhibition takes the form of a series of tableaux, showing profiles of different trees, their names, their ecology, and showing their return to man in many different ways.

The aim is to encourage Garden Clubs, Shire and Municipal Councils and ecologists all over Australia to stage similar exhibitions, and so spread concern over the loss of our trees and the idea that whenever a tree is felled or dies another should be planted in its place.

The proceeds from this Exhibition will be given to the Bowral "Scented Garden" which is to be established with special consideration for blind and handicapped people, with walkways, ramps and raised garden beds. As the "Gateway to Bowral" from the south, the aim is to have colour and perfume all year round, in the form of flowering trees, shrubs and annuals.

It is hoped that visitors from other States will support these efforts by visiting Bowral at this time of year, which is also the time of the famed "Tulip Time Festival".

Open Day at Wirrimbirra Sanctuary

An Open Day will be held at the Wirrimbirra Sanctuary, Bargo, New South Wales, on Sunday 16th September 1984, from 9.45 am to 4 pm.

Talks and walks will explain and demonstrate the facilities and services provided by this National Trust property for education, conservation and the enjoyment of the environment. Speakers

and walk leaders will represent the National Trust, the David G. Stead Memorial Foundation, the Department of Education and the teaching and management staff of the Sanctuary.

Lunch (a "sausage sizzle" with salad) will be available if ordered beforehand.

The Sanctuary features a rich and varied floral and foliage display — flamboyant, delicate, quaint, endangered and rare species — the white-flowering N.S.W. Waratah is already preparing itself for this day.

For further information contact the Manager, Wirrimbirra Sanctuary, Hume Highway, Bargo, N.S.W. 2574 (telephone (046) 84 1112).



International Garden Festival, Liverpool, England, 1984

Some Press comments.

London Daily Telegraph, 3rd May 1984:

"Unveiling a plaque to mark the opening, the Queen said 'Some people have probably wondered about the relevance of organizing a garden festival in a derelict area of Liverpool. I think it is most appropriate. The wonderful feature of Nature is its power of renewal. The gardens and exhibitions blooming in this site are symbolic of what we all wish for Liverpool'".

London Daily Telegraph, 27th April 1984:

"Britain's biggest garden festival, an ambitious mix of Mother Nature, amusement park and county show, in the most unlikely of settings, went on show to the world's Press yesterday . . . this international garden festival, on 250 acres of reclaimed rubbish tip and docklands, is a ninety million pound extravaganza of hopes and contrasts".

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Macksville Hardware & Garden Centre, Macksville
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